

P-M

Kerr-McGee Oil Ind. Inc. State #1
SW/SW Sec 34-T20N-R26E. Apache Co. 1-72

County Apache

Area Pinta

Lease No. _____

SE-SW-SW (No footages given)

Well Name Kerr McGee State # 1

Location SW SW Sec 34 Twp 20N Range 26E Footage 400' FSL 4 1290' FWL
Elev 5780 Gr _____ KB Spud Date 2-20-50 Completed Abandon 10-20-56 Total Depth 1520; PB 1200

Contractor _____

Casing Size Depth Cement

12 15 7 SX

10 640

8 5/8 840 25 SX

6 5/8 1530 Net Cemented

Drilled by Rotary _____

Cable Tool X

Production Horizon Coconino Perf 1098-1100

Initial Production 2500 MCFPD 8.09% He

HELIUM WELL

REMARKS Well formerly the Apache Oil & Helium Co. Macie #1

" " Kipling Pet Inc. #1

Top Coconino 1027; Surface Map by S. Brown

Top Supai 1350; Shut-in 99.1 #

Helium 8.09%

Raw gas: Nitrogen 89.8%

Elec _____

Logs GRN, Radioactivity

Applic. _____

to Plug _____

Plugging _____

Record _____

Completion _____

Report X

Sample Log _____

Sample Descript. X

Sample Set 69

Core Analysis _____

DSTs _____

Water well accepted by _____

Bond Co. _____

& No. Indem Co. of No. Am.

Bond Am't \$ 10000

Cancelled _____

Date _____

Organization Report X

Filing Receipt _____

Dated _____

Well Book X

Plat Book X

API No. 02-001-05130

Loc. Plat X

Dedication _____

All Sec 34

Permit Number None

Date Issued _____

#1-72
1379 MMCF

County Apache

Area Pinta

Lease No. _____

SE-SW-SW (No Footages given)

Well

Name Kerr McGee

State #1

Location SW SW

Sec 34

Twp 20N

Range 26E

Footage 400' FSL & 1290' FWL

Elev 5780 Gr

KB

Spud Date 2-20-50

Completed

Abandon 10-20-56

Total

Depth 1520; PB 1200

Contractor

5796 KB from HSG 57 1/2' gnd
Perdrel

Casing Size Depth Cement

12 15 7 SX

10 640

8 5/8 840 25 SX

6 5/8 1530 Not Cemented

Drilled by Rotary

Cable Tool X

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Report

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Core Analysis

DSTs

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Bond Co.

& No. Indem Co. of No. Am.

Bond Am't \$ 10000

Cancelled _____

Date

Organization Report X

Filing Receipt _____

Dated _____

Well Book X

Plat Book X

API No. 02-001-05130

Loc. Plat X

Dedication

All Sec 34

Permit Number None

Date Issued _____

#1-72
1,379 MME

STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O & G 52

Form Prescribed Under Oil and Gas Conservation Act of 1951

WELL COMPLETION REPORT
(File in Duplicate)

SEE ATTACHED LETTER

Operator Kerr-McGee Oil Ind., Inc. Field Wildcat
Street P.O. Box 337 Post _____
City Sunray State Texas County _____
Lease Name Macie Well No. 1 Acres in Unit 320
Location Apache County
SE-SW-SW Sec. 34 Twp. 20N Rge. 26E
Elevation DF GR 5780' Electric Log Run Gamma Ray, Neutron, 9-159 56
Number of Crude Oil Producing Wells on this Lease, including this well None
Has Authorization to Transport Oil or Gas from Well, Form O&G 57 been Filed? No

NO OFFICIAL COMPLETION GAUGE - SHUT IN GAS WELL

Date Test Commenced 19 Hour M. Date Test Completed 19 Hour M.
Length of Test _____ Hours _____ Minutes

For Flowing Well: For Pumping Well:
Flowing pressure on Tbg. _____ lbs./sq.in. Length of stroke used _____ inches
Flowing pressure on csg. _____ lbs./sq.in. Number of strokes per min. _____
Size tbg. _____ in. No. ft. run _____ Size of working barrel _____ inches
Size choke _____ in. Type choke _____ Size tubing. _____ in. No. ft. run _____
Length _____ in. Shut in pressure 82.9

If flowing well, was this well flowed for the entire duration of this test without the use of swab or other artificial flow device? _____ If jetted, used _____ cu. ft. gas per bbl. oil. Result of this test (bbls. net oil per 24 hrs.) _____ (100% tank tables.)

Gas-oil ratio of this well is _____ cu. ft. of gas per bbl. of oil.

Per cent water produced during this test _____

Gravity of oil produced during this test (Corrected to A. P. I. 60° F)

Name of Pipe Line or other carrier _____

If perforated: No. Shots 8 From 1098' To 1100' Date Perforated 9-20-56

Date well Spudded Unknown 1950 Date Well Completed 20 October 1956

Top Pay 1027 Ft. Total depth of well 1200' PB Ft. from 1550'

CASING LINER AND TUBING RECORD

String	Size	Wt./Ft.	Name and Type	Amount Ft. In.	Depth Set at	Perforated From To
	12"			15	15 GL	
	10"			640	640 GL	
	8 5/8"			840	840 GL	
	6 5/8"			1530	1530 GL	1098' 1100'

CEMENT AND TESTING RECORD

Size of Hole	String	Where Cement Placed	No. Sacks of Cement	Method Used	Pressure Applied in Testing	Hardness of Cement Drilled	Type of Cement
16"	12"	Outside	7	dump			Common
12"	10"	None		Mudded in			
10"	8 5/8"	Bottom	25	displaced			Common
8"	6 5/8"	None		Mudded in			

CHEMICAL OR SHOOTING RECORD BEFORE COMPLETION

Size	Chemical or	Quantity	Date	From	Depth to

AFFIDAVIT

I, Otto C. Barton, being first duly sworn on oath state that I have knowledge of the facts and matter herein set forth and that the same are true and correct.

445723

Otto C. Barton
Representative of Company

Subscribed and sworn to before me this 17 day of November 1956

Moore County, TEXAS
My Commission expires: 6-1-57

Michael Little
Notary Public

46588

PLUGGING RECORD							
Operator Kerr-McGee Corporation				Address P. O. Box 250, Amarillo, TX. 79105			
Federal, State, or Indian Lease Number, or lessor's name if fee lease.			Well No. 1		Field & Reservoir PINTA DOME/Coconino Sand		
State SE, SW, SW Sec. 34 - Twp 20N - Rge 26E			Sec-Twp-Rge or Block & Survey			County Apache	
Location of Well							
Application to drill this well was filed in name of Apache Oil & Helium Co.		Has this well ever produced oil or gas yes, Helium		Character of well at completion (initial production): Oil (bbls/day) N/A Gas (MCF/day) 10,800 (8.22%He)		Dry? No	
Date plugged: 4/12/77		Total depth 1550		Amount well producing when plugged: Oil (bbls/day) --- Gas (MCF/day) 0.92		Water (bbls/day) 0	
Name of each formation containing oil or gas. Indicate which formation open to well-bore at time of plugging		Fluid content of each formation		Depth interval of each formation		Size, kind & depth of plugs used indicate zones squeeze cemented, giving amount cement	
N/A							
CASING RECORD							
Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped, etc.)	Packers and shoes		
12"	15'	0	15'		EZSV Retainer at 974'		
10"	640'	0	640'				
8 5/8"	840'	0	840'				
6 5/8"	1530'	0	1530'				
Was well filled with mud-laden fluid, according to regulations? Yes				Indicate deepest formation containing fresh water.			
NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE							
Name		Address			Direction from this well:		
Kerr-McGee Corporation		P. O. Box 250, Amarillo, TX 79105			all		
In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.							
Well was P & A by setting 6 5/8" EZSV cement retainer at 974' w/75 sxs. Class "B"							
Cement pumped below retainer and 180 sxs Class "B" Cement from retainer to surface.							
Use reverse side for additional detail.							
CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Engineering Assistant of the Kerr-McGee Corporation (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.							
Date April 22, 1977		Signature <i>Lynn Kelley</i> Lynn Kelley					
		APR 25 1977					
Permit No. 1-160		D & G CONS. COMM.			STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION Plugging Record File One Copy		
					Form No. 10		

APPLICATION TO ABANDON AND PLUG

FIELD Pinta Dome
 OPERATOR Kerr-McGee Corporation ADDRESS P. O. Box 250, Amarillo, TX 79105
 Federal, State, or Indian Lease Number or Lessor's Name if Fee Lease _____ State _____ WELL NO. 1
 SURVEY T-20N, R-26E SECTION 34 COUNTY Apache
 LOCATION SE, SW, SW

TYPE OF WELL Gas (Helium) TOTAL DEPTH 1550'
 (Oil, Gas or Dry Hole)
 ALLOWABLE (If Assigned) None
 LAST PRODUCTION TEST OIL 0 (Bbls.) WATER 0 (Bbls.)
 GAS .92 (MCF) DATE OF TEST 11-1-75
 PRODUCING HORIZON Coconino Sand PRODUCING FROM 1026' TO 1046'

1. COMPLETE CASING RECORD

12" - cemented at 15'.

10" - mudded at 640'.

8-5/8" - cemented at 840' with 25 sx.

6-5/8" - mudded at 1530'. Perforations 1026-1046'.

Howco EZ Drill B.P. at 1075' with 2 sx Cal Seal on plug.
Perfs. 1098-1100'.

2. FULL DETAILS OF PROPOSED PLAN OF WORK

1. Set cement retainer at 975'. Squeeze 75 sx cement below retainer.

2. Equalize 50 sx cement from 975' to 770'.

3. Pull tubing.

4. Fill casing to surface with cement.

5. Erect marker of 4" pipe per Rule 202-A7.

If well is to be abandoned, does proposed work conform with requirements of Rule 202? yes If not, outline proposed procedure above.

DATE COMMENCING OPERATIONS Upon approval.

NAME OF PERSON DOING WORK _____ ADDRESS _____

CORRESPONDENCE SHOULD BE SENT TO C. J. Breeden

Name

District Manager

Title

P. O. Box 250, Amarillo, TX 79105

Address

March 1, 1977

Date

Date Approved 3-7-77

STATE OF ARIZONA
 OIL & GAS CONSERVATION COMMISSION

By: [Signature]

Permit No. None

STATE OF ARIZONA
 OIL & GAS CONSERVATION COMMISSION
 Application to Abandon and Plug
 File Two Copies

Form No. 9

1-72

APR 28 1954

Kipling Petroleum-Macie #1
NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 34, T. 20 N., R. 26 E.
Apache County

Total depth - 1520 feet

Casing: 14" surface to 76 ft.; 10" surface to about 793 ft.;
8" surface to about 864 ft.; 6-5/8" surface to 1520
ft.

Cementing record not good but it is felt that the 8" never
made satisfactory water shut-off.

Gas was reported encountered about 735 feet.

The condition of the hole is much the same as when they
pulled the rig off. Well was not properly shut
in and gas was escaping until recently when it
was reported that this condition had been corrected.

Colgrove-Hortenstine #58

Kipling Petroleum-Macie #2, Schmitz Kipling-Hortenstine #2
SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 20 N., R. 26 E.
Apache County

Original rotary hole drilled to total depth 2517.

They lost their tools and were unsuccessful in fishing them
out. They moved off and later Kipling moved a cable
tool rig in to bypass the junk in the hole. At
2100 they angled drilled to a depth of 2252. They
were forced to shut down because of financial reasons
and for over a year have not turned a wheel.

APR 28 1954

DISTRICT NO. 10

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION
MULTI-POINT BACK PRESSURE TEST
FOR GAS WELL

FORM GWT-10

Company Hess-Edwards Oil Co. Lease Edwards Well No. 7
New Well x Retest Date of Test 23 1956
Field County Acres
Sec. 34 Bk. Tr. Loc. Conn.
Casing 8 5/8 Wt. I.D. 4.000 Set at Perf. To 7000
Liner Wt. I.D. Set at Perf. To
Tubing Wt. I.D. Set at Perf. To
Gas Pay From 1095 To 3007 L 1095 G GL Barometric 12.0
e^s 1.071 F_d 0.5947 Well Shut In Hours Before Test
Size of Prover 1 Size of Meter Run Type of Connection

REMARKS:

OBSERVED DATA

RUN NO.	SIZE METER RUN OR PROVER ORIFICE	METER PRESSURES				WELLHEAD		DURATION OF FLOW IN HOURS
		STATIC Psig	P _m Psia	DIFFERENTIAL Inches-Rocks	FLOW TEMP	WP Psig	P _w Psia	
1	1				70	70.0	70.0	1.0
2	1 3/8				70	70.0	70.0	1.0
3	1 1/2				70	70.0	70.0	1.0
4	1 3/4				70	70.0	70.0	1.0
5	2				70	70.0	70.0	1.0

FLOW CALCULATIONS

RUN NO.	COEFF. "C" (24 HR.)	h _w P _m	$\sqrt{h_w P_m}$	WORKING PRESSURE ON PROVER		FLOW TEMP. FACTOR F _{tt}	GRAVITY FACTOR F _g	FLOW RATE 0-M ² cf6 @ 14.65
				Psig	Psia			
1	22.007			70.0	70.0	1.0	1.0	1.0
2	41.210			70.0	70.0	1.0	1.0	1.0
3	69.105			70.0	70.0	1.0	1.0	1.0
4	67.002			70.0	70.0	1.0	1.0	1.0
5	89.628			70.0	70.0	1.0	1.0	1.0

S.I.P. 92.1 PsigBar. 12.0P_c 111.1 PsiaPRESSURE CALCULATIONS
(All Squared Pressures In Thousands)

$$P_c^2 - P_s^2 = F_d^2 \times e^s = P_f^2$$

RUN NO.	P _w ²	e ^s P _w ²	F _d ²	F _t ²	R ²	P _s ²	P _f ² - P _s ²
1	11.77	12.61	2.35	2.31	1.0	12.70	1.0
2	10.71	11.47	2.35	2.31	1.0	12.70	1.0
3	10.24	10.97	2.35	2.31	1.0	12.70	1.0
4	8.75	9.32	2.35	2.31	1.0	12.70	1.0
5	7.31	7.83	2.35	2.31	1.0	12.70	1.0

Slope of Curve: n = .539Angle of Curve: θ = 62° 11'Absolute Open Flow: 10,500 MCF/Day

46588

R. R. COMMISSION:

Company: Pipe Line: Others:

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Kerr-McGee Corporation

2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify) _____

3. Well Name State #1

Location SE. SW. SW

Sec. 34 Twp. 20N Rge. 26E County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease _____

5. Field or Pool Name Pinta Dome (Coconino)

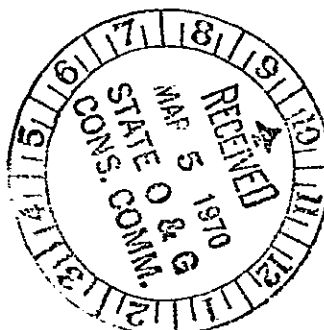
6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	MONTHLY PROGRESS <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	DIRECTIONAL DRILL <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	REPAIRING WELL <input checked="" type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	PERFORATE CASING <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(OTHER) _____	ABANDONMENT <input type="checkbox"/>
(OTHER) _____			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Set cast iron bridge plug at 1075' in 6-5/8" casing. Dumped 2 sxs Calseal on top of bridge plug. Plug back to 1070' TD. Perforated 1026 to 1046 with 2 shots per ft. Job completed 2/19/70. Well turned back in line.



8. I hereby certify that the foregoing is true and correct.

Signed [Signature] O. C. Barton Title Production Superintendent Date 3/3/70

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

Permit No. 0

SUNDY NOTICES AND REPORTS ON WELLS

1. Name of Operator Kerr-McGee Corporation
 2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify) _____
 3. Well Name State #1
 Location SE, SW, SW
 Sec. 34 Twp. 20N Rge. 26E County Apache Arizona.
 4. Federal, State or Indian Lease Number, or lessor's name if fee lease _____

5. Field or Pool Name Pinta Dome (Coconino)

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	<input type="checkbox"/>	PULL OR ALTER CASING	<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>	DIRECTIONAL DRILL	<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>	PERFORATE CASING	<input checked="" type="checkbox"/>
REPAIR WELL	<input checked="" type="checkbox"/>	CHANGE PLANS	<input type="checkbox"/>
(OTHER)	_____	(OTHER)	_____

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Attempt a plug off or reduction in water production by setting a CI Bridge Plug at approximately 1075' and dumping 2 sxs Cal Seal on top to plug off present perforations of 1098' to 1100'. Then perforate top of Coconino from 1026' to 1046' w/2 jets/ft. and return well to production.

8. I hereby certify that the foregoing is true and correct.

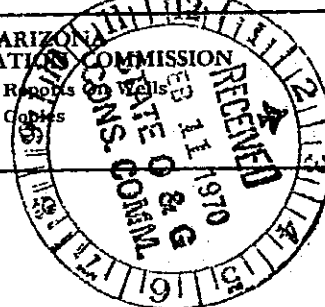
Signed Otto C. Barton
 Otto C. Barton

Title Production Supt. Date 2/10/70

Permit No. 0
 AO & GCC-2
 CJB-1

JIF-1
 R-Williams, Burkett, WRF

Form No. 25



GAS WELL OPEN FLOW POTENTIAL TEST REPORT

4-POINT TEST

Initial ☐

Test Annual ☒

Special ☐

Field Pinta Dome		Reservoir Coconino Sand		Test Date 9-20-67	
Operator Kerr-McGee Corporation		Lease State		Well No. 1	
County Apache	Location SE - SW - SW	Section 34, 20N, 26E	Completion Date 10-20-56	Total Depth 1600'	T/Pay 1027'
Producing Thru TBG. X	Reservoir Temperature 71 °F	Wellhead Temperature 71 °F	CSG. Size 6 5/8	Wt/Ft. 20	I.D. 6.049
Set @ 1530' GL	Avg. Prod. Length (L.) 1099'		GL 998	Gas-Liquid Hydrocarbon Ratio MCF per Bbl. 1100'	Gravity of Liquid (Apl) 1100'
TBG. Size 6 5/8	Wt/Ft. 20	O.D. 6.049	I.D. 6.049	Set @ 1530' GL	Gas-Liquid Hydrocarbon Ratio MCF per Bbl. 1100'
Pipeline Connection Kerr-McGee Corporation			Type Taps Flange		
Multiple Completion (Dual or Triple)			Type production from each zone		

OBSERVED DATA Flow Data

No.	Time of Flow Hours	Orifice (Line) Size	Orifice (Orifice) Size	Press. Roots psig	Diff. h Roots	Tubing Press. psig	Casing Press. psig	Flowing Temp. °F
SI	14			Roots PSIG			66.5	
1.	1	4	2 1/2	4.61 42.4	4.00		66.1	58.6
2.	1	4	2 1/2	4.61 42.7	5.71		65.5	65.3
3.	1	4	2 1/2	4.62 42.5	6.80		64.4	70.4
4.	1	4	2 1/2	4.63 43.0	7.05		62.6	73.5

FLOW CALCULATIONS

No.	Coefficient (24 Hr.)	$\sqrt{\frac{h}{w}}$	p m	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q MCF/D
1.	30.087	18.44		54.2	1.0014		1.000	555.6
2.	30.087	26.32		54.5	.9949		1.000	787.9
3.	30.087	31.42		54.3	.9901		1.000	936.0
4.	30.087	32.64		54.8	.9872		1.000	969.5

Pc = 78.3 Pc² = 6.131 PRESSURE CALCULATIONS Fc = 0.5241 ; 1-e^{-S} = 0.070

	$\frac{P_w}{P_t}$ (psia)	P _t	F _c Q	(F _c Q) ²	(F _c Q) ² X 1-e ^{-S}	P _w	P _c - P _w	Cal. P _w	$\frac{P_w}{P_c}$
1.		6.068	.291	.085	.0060	6.074	.057	77.9	.9949
2.		5.975	.413	.171	.0120	5.987	.144	77.4	.9885
3.		5.806	.491	.241	.0169	5.823	.308	76.3	.9745
4.		5.535	.508	.258	.0181	5.553	.578	74.5	.9515

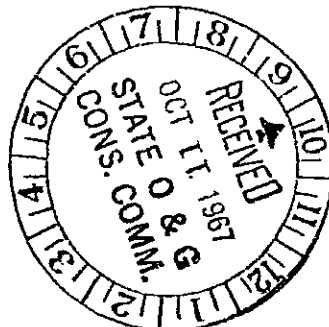
Absolute Potential

2,670

MCF/D

0.335

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Engineer of the Kerr-McGee Corp. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.



Signature

STATE OF ARIZONA OIL & GAS
CONSERVATION COMMISSION

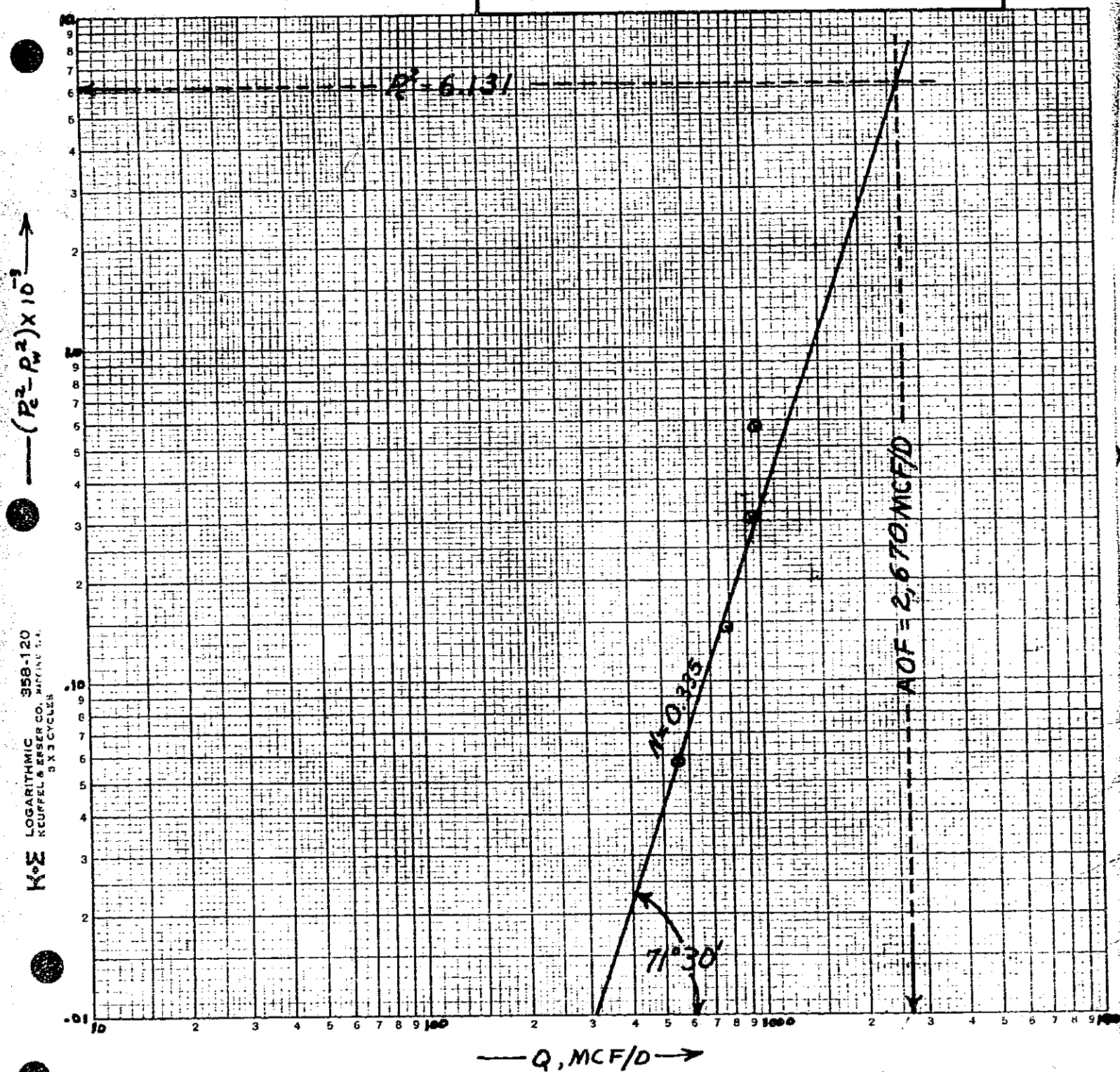
Gas Well Open Flow Potential Test Report (4-Point Test)

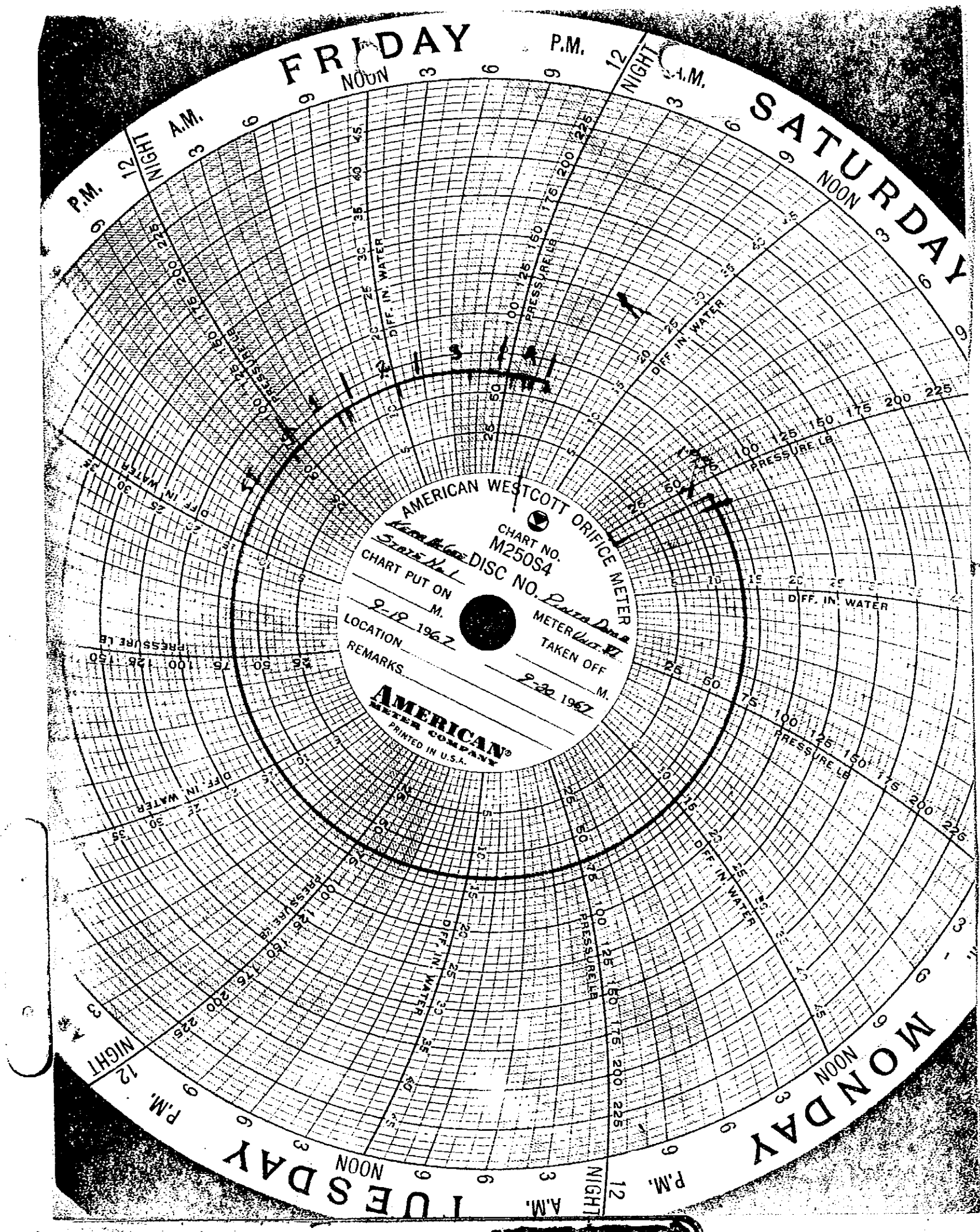
Form No. 18

File two copies

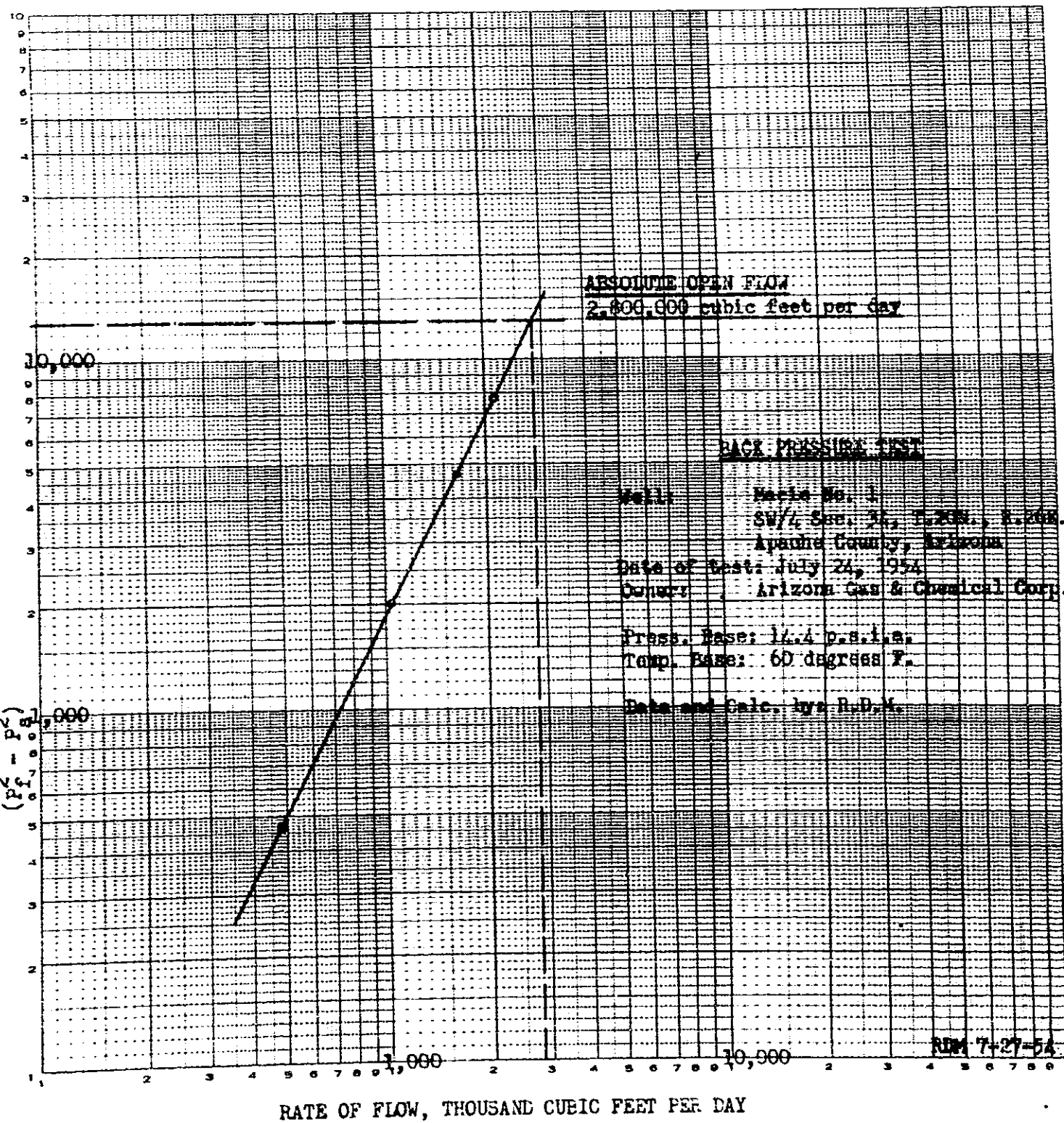
Effective _____ 19____

4 POINT BACK PRESSURE TEST
 STATE #1, PINTA DOME FIELD
 APACHE CO., ARIZ. Tested - 9/20/67





ND. 340R-LO. DIETZEN GRAPH PAPER
LOGARITHMIC



KERR-McGEE OIL INDUSTRIES, INC. - State #1
 (s/a Apache Oil & Helium State #1 -
 s/a Kipling Petroleum - Macie State #1)

Location: SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$; Sec. 34, T. 20 N., R. 26 E., Apache County
 2 miles S. of Pinta and 36 miles east of Holbrook.

This log was made from a study of the ore samples by the Authors, in the U. S.
 Geological Survey Ground Water Office, Tucson, Arizona, August 23, 1954.
 (Study made by Ralph Arnold and Wm. Odell from samples submitted by Apache
 Oil & Helium in 1951.)

0-60	Typical red sandstone, top of koenkopi or bottom Chinle
85	Dark lavender, Painted Desert color
100	Light red sandstone
150	Purplish sandstone
180	Red Shale
260	Light red, purplish sandstone
290	Still lighter red
380	Medium coarse gray sandstone
480	Purplish red sandstone
540	Gray clay and shale
560	Deep, dark purple shale and sandstone
570	Gray sandstone and shale
605	Light purplish sandstone and shale
620	Darker " " "
630	Light gray " "
635	Gray " "
650	Light purplish " "
680	Gray Sandstone " "
690	Mixed gray and purple sandstone
700	Reddish sandstone
760	Dark purple, little gray layers
765	Light reddish brown
770	Dark reddish brown
775	Dark purple
785	Reddish purple sandstone
795	Dark gray sandstone
820	Light reddish purple
830	Sand and light red shale
841	Dark reddish purple sand
845	Light purple sand
875	Darker purple sand
880	Light reddish purple sand
885	Gray sandstone
900	Light reddish purple sandstone
920	Reddish purple sandstone
925	Dark reddish purple
930	Very light gray sandstone
935	Light reddish purple
945	Gray and light reddish purple sandstone
950	Light red
1010	Light and dark brown sandstone - no purple
1031	Purplish brown
1035	White hard sandstone-helium gas came in here - Coconino
1040	Yellow powdery sand - Coconino
1045	Yellowish sandstone
1055	Hard white sandstone
1076	Light brown sandstone
1080	Yellow powdery sand
1345	Soft fine sandstone, more like silt - Coconino
1350	Reddish to tan sandstone (Top Supai)
1375	Yellow silt (Coconino?)
1385	Reddish fine grained sand
1435	Reddish, coarser grained sand
1450	Brownish red shale
1460	White sand
1485	Still more reddish sandstone
1495	Red Coarse thin sandstone
1500	Finer grained sandstone and shale
1505	Fine reddish sandstone
1510	Coarse grained reddish sandstone
1515	Very coarse dark gray sandstone
1520	Red Supai

STATE #1 - (K-Mc) Sec. 34-T20N-R26E

3/21/58

STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O&G 53

Form Prescribed Under Oil and Gas Conservation Act of 1951

CAPACITY TEST REPORT
BACK PRESSURE TEST OF GAS WELL
(Critical Flow Prover or Orifice Meter)
OPEN FLOW POTENTIAL TEST

Test date September 23, 1956.

Date 26 May 1958

Operator Kerr-McGee Oil Industries, Inc. Field

Lease State #1 (Formerly Macie #1) Well Ac.

Acres Under Well 320 Connection none

Reservoir Pinta Structure (Cocorcina) County Apache

Sand Depth 1027'-1100' - Perforations 1095'-1097' Csg. 6 5/8" @ 1550' Tubing @ none

Gr. of Gas .901 Size Line and Meter or Prover 1" prover

Is Volume Corrected to sand face? Yes

Barometric Pressure used 12.0 P.S.I.

Orifice Size	Closed Pres. 99.1 Lbs.		Back Pressure Test		
	Coeff. 24 Hr.	Working Pressure P.S.I.G.	2 Pc 2 PW	If Orifice Meter Used Lb.	Volume M.C.F.
1	22.007	96.5	.52		1.931
1 3/8	41.210	91.5	1.47		3.449
1 1/2	49.106	89.2	1.87		4.019
1 3/4	67.082	81.6	3.24		5.078
2	88.628	73.5	4.53		6.128

Volume - 24 Hour 10.800 MCF - Slope of curve N .539 angle of curve 61° - 40 Mac G. F.

Open Flow Test

Shut In Pres. 99.1 Time Shut In 72 hrs. + REMARKS
Water - Oil - Etc.
(Important)

Producing Through Casing

TIME	READING	LIQUID USED	SPRING GAUGE
15 Min.			
20 Min.			
25 Min.			
30 Min.			

Test Until Two Readings Check

OPEN FLOW CAPACITY MCF per 24 Hrs.

Very light spray water.

SIGNATURES

BOARD

CON.

CO.

OTHER

(ACCOMPANY THIS REPORT WITH A BACK PRESSURE CURVE)

Back Pressure test attached

NET WELL COMPLETION
(OFFICIAL COMPLETION GAUGE)

Date of First Production Test September 23, 1956 Date of Completion Gauge September 23, 1956

Total Oil saved while testing well prior to the date of the official completion gauge None
Barrels.

Production Gauge on 24 Hour Basis 0 Bbl. Oil; Very light spray % Water; 6128 MCF Gas.

The undersigned certifies that the Rules and Regulations of the Commissioner have been complied with except as noted above, and that the transporter('s) authorized to transport the percentage of Oil and/or Gas produced from the above described drilling unit, and that this authorization will be valid until further notice to the transporter named herein or until cancelled by the Commissioner.

Executed this the 24 day of October 1961.

Kerr-McGee Oil Industries, Inc.
(Company or Operator)

C. F. Miller, Manager Prod. Dept.
(Affiant) (Title)

STATE OF Oklahoma

COUNTY OF Oklahoma

Before me, the undersigned authority, on this day personally appeared _____

C. F. Miller, known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is authorized to make this report and has knowledge of the facts stated herein and that said report is true and correct.

Subscribed and sworn to before me this the 24 day of October 1961.

My Comm. Expires Oct 23, 1962

Rita Lee
Notary Public In and For Oklahoma
County, Oklahoma

Approved R. B. [Signature]

COMMISSIONER

BY: _____

(FOLLOW INSTRUCTIONS IN INSTRUCTION
SHEET)

STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION
PHOENIX, ARIZONA

Form O & G 57
Sheet No. 1

PRODUCERS CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL OR GAS FROM DRILLING UNIT

1. Form Prescribed Under Oil and Gas Conservation Act 1951

2. This form is to be completed on both sides.

Lease Kerr-McGee State Well No. 1 Field Pinta Dome
Sec. SW/4 SW/4 34 Twp. 20 North Rge. 26 East Cty. Apache Co Pool Pinta Dome

Producer Kerr-McGee Oil Industries, Inc.

Address all correspondence concerning this form to: Kerr-McGee Oil Industries, Inc.
Attention: C. F. Miller

Street Kerr-McGee Building City Oklahoma City State Oklahoma

The above named producer hereby authorizes Kerr-McGee Oil Industries, Inc.
(Name of Transporter)

Whose principal place of business is Kerr-McGee Building, Oklahoma City, Oklahoma
(Street) (City) (State)

And whose Field Address is: Kerr-McGee Oil Industries, Inc., P. O. Box 15, Navajo
(on U. S. Highway 66), Arizona
to transport 100 % of the ^{gas} ~~oil~~ produced from the Drilling Unit designated above until
further notice.

Other transporters transporting Oil or Gas from this drilling unit are:

<u>None</u>	<u>%</u>	<u>%</u>
(Name of Transporter)		(Name of Transporter)

REMARKS:

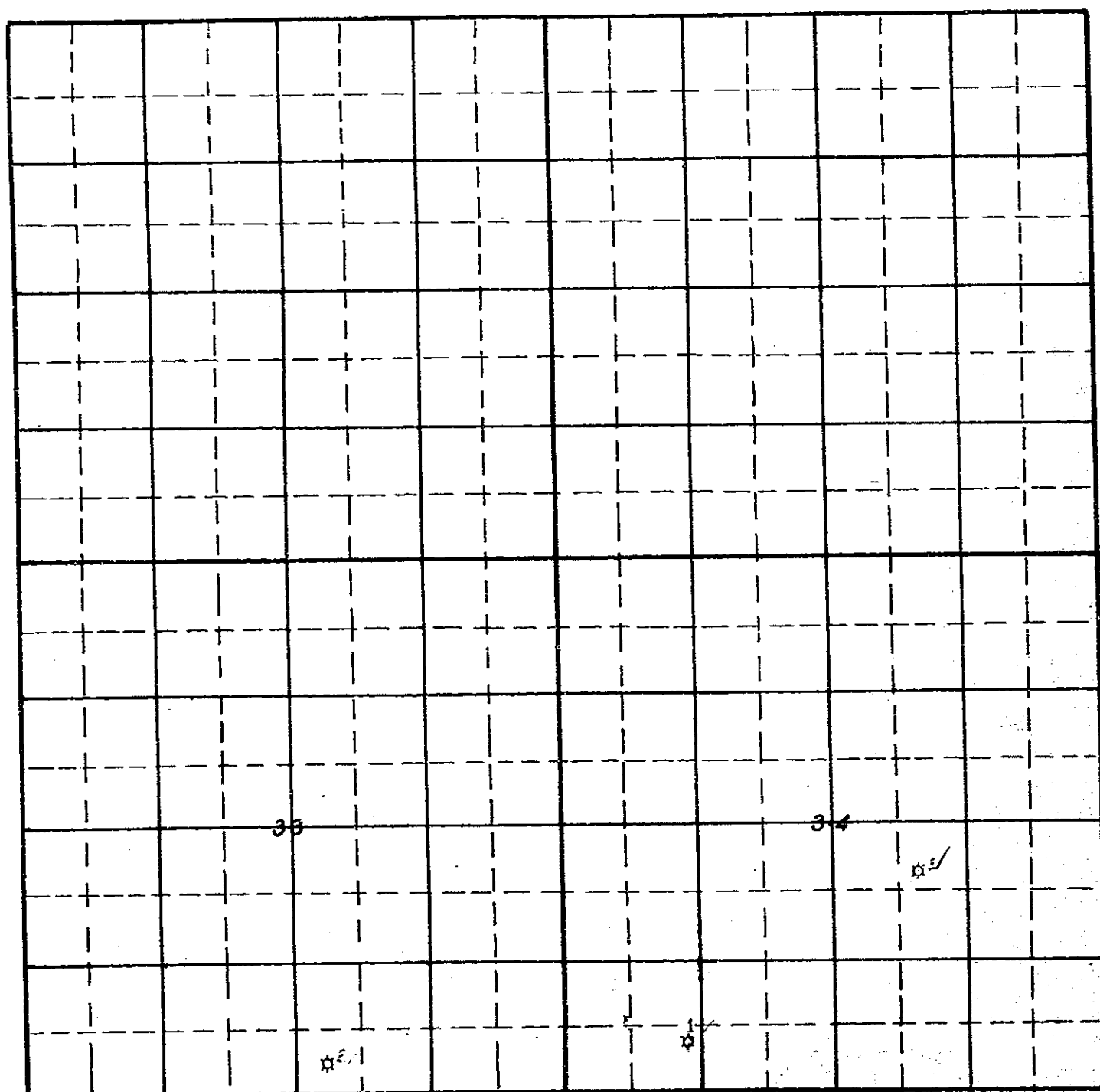
(OVER)

46588

Kerr-McGee Oil Ind., Inc.

Macie Lease

Apache County, Arizona



Macie #1, SE-SW-SW-Sec. 34, 20N-26E
Macie #2, SW-SW-SE-Sec. 33, 20N-26E
Macie #3, NE-NW-SE-Sec. 34, 20N-26E

46588



SPECIFIC GRAVITY REPORT

Well Name: Macie No. 1
Location: SW/4, Sec. 34, Tp. 20 N, Rg. 26 E.
Apache County, Arizona
Run by: R. D. Munnerlyn
Witness: Philip T. McGrath and P. W. Johnson
Date: July 24, 1954
Instrument: Ac - Me Gravity Balance

FIELD DATA

	<u>Manometer Reading</u> <u>MM of Mercury</u>			<u>Temperature</u>		<u>Barometer</u> <u>" Mercury</u>
	<u>Right</u>	<u>Left</u>	<u>Total</u>	<u>° F.</u>	<u>° F. Abs.</u>	
Air	90	90	180	96	556	24.45
Gas	135	134	269	96	556	24.45
Air Check	90	90	180	96	556	24.45

CALCULATIONS

For Air

Barometric Pressure = 24.45" Hg x 25.4 MM/IN = 621 MM
Manometer Reading = 180 MM
Absolute Pressure = 801 MM

For Gas

Barometric Pressure = 24.45" Hg x 25.4 MM/IN = 621 MM
Manometer Reading = 269 MM
Absolute Pressure = 890 MM

Specific gravity of gas = $\frac{\text{Absolute Pressure on Air}}{\text{Absolute Pressure on Gas}} = \frac{801}{890} = 0.900$

GAS ANALYSIS

Well: Macie No. 1

Location: Sec. 34, T. 20N, R. 26E, Apache County, Arizona

Depth of Well to Sand: 1032 feet (from company report)

Date of Sampling: July 24, 1954

Sample taken by: R. D. Munnerlyn

Well Owned by: Arizona Gas and Chemical Corp.

Lab. Sample No.: FS-5651

Date Analyzed: July 28, 1954

MASS SPECTROMETER ANALYSIS

Methane	Trace	Hexanes plus	0.0%
Ethane	0.0%	Nitrogen	89.8 ✓
Propane	0.0	Oxygen	Trace ✓
N-butane	0.0	Argon	0.6 ✓
I-butane	0.0	Helium	8.4 ✓
N-pentane	0.0	Hydrogen	trace ✓
Cyclopentane	0.0	Carbon Dioxide	1.1 ✓
		Hydrogen Sulfide	0.0

Calculated Gross B.t.u./cu.ft. dry at 60° F. and 30" Hg. 0

PRESSURE BUILD-UP TEST

Well Name:

Macie No. 1

Location:

SW/4, Sec. 34, Tp. 20 N, Rg. 26 E.
Apache County, Arizona

Run By:

Geo. B. Shelton and R. D. Munnerlyn

Witnessed By:

P. T. McGrath and W. D. Johnson

Pressure

Well blowing through 2-inch

17.6 p.s.i.g.

Well shut-in at 3:33 p.m.

17.6 p.s.i.g.

At 3:35 p.m.

97.8 p.s.i.g.

At 3:36 p.m.

97.95 p.s.i.g.

At 3:37 p.m.

98.0 p.s.i.g.

DEAD-WEIGHT PRESSURE GAGE CALIBRATION DATA

Gage No.: 2

Tested by: R. D. Munnerlyn

Date Tested: July 21, 1954

<u>Test Gage</u> <u>Reading p.s.i.</u>	<u>Dead-Weight #2</u> <u>Reading, p.s.i.</u>	<u>Error</u> <u>p.s.i.</u>
499.83	500.00	+0.17
474.86	475.00	+0.14
419.87	420.00	+0.13
354.88	355.00	+0.12
304.90	305.00	+0.10
204.91	205.00	+0.09
159.91	160.00	+0.09
134.92	135.00	+0.08
124.92	125.00	+0.08
104.92	105.00	+0.08
94.93	95.00	+0.07
84.93	85.00	+0.07
74.93	75.00	+0.07
54.94	55.00	+0.06
34.94	35.00	+0.06

CALCULATION OF PRESSURES AT SAND FACE

Run	Wellhead Working Pressure PW	PW ²	Rate of Flow M.c.f. Per Day Q
Shut-in	109.96	12,091	Shut-in
1	107.94	11,651	485
2	101.03	10,207	1,048
3	87.63	7,679	1,655
4	69.59	4,843	2,129

$$R = \frac{Q \sqrt{GL}}{K}$$

$$G = 0.900$$

$$L = 1044'$$

$$GL = 940$$

$$\sqrt{GL} = 30.66$$

$$K = 48,960 d^{8/3} = 13,601,363$$

$$R = Q \frac{30.66}{13,601,363} = 0.0000225 Q$$

Run No.	R	R ²	$\frac{P_1}{\sqrt{R^2 + P_W^2}}$	$\frac{P_W}{P_1}$	F	K*	e ^k	$\frac{P_f}{\text{and } P_s}$	$P_f^2 - P_s^2$
Shut-in	-	-	-	-	1.000	0.0326	1.0332	113.61	
1	1.1	1.2	107.95	0.999	1.000	0.0326	1.0332	111.53	466
2	2.4	5.7	101.06	0.999	1.000	0.0326	1.0332	104.42	2001
3	3.7	13.7	87.71	0.999	1.000	0.0326	1.0332	90.62	4693
4	4.8	23.0	69.76	0.998	0.999	0.0326	1.0332	72.08	7709

$$*K = 0.0000347 GLF$$

ABSOLUTE OPEN FLOW: 2,800,000 CUBIC FEET PER DAY

BACK-PRESSURE TEST OF MACIE NO. 1 WELL

FIELD DATA

Date Run: July 24, 1954

By: R. D. Munnerlyn

Specific Gravity: 0.900 (Air = 1.00)

Avg. L: 1044 ft.

G L: 939.6

Run with 2-inch critical flow prover
Dead weight gage #2 used for test

<u>Time</u>	<u>Orifice Size, Inches</u>	<u>Prover Pressure p.s.i.g.</u>	<u>Prover Temp. °F.</u>	<u>Barometer Inches of Mercury</u>	<u>Remarks</u>
12:20 p.m.	Shut-in	98.0	—	24.49	Shut-in pressure
12:30	0.125	98.0	101.5	24.49	0.125" plate on at 12:30 p.m.
12:50	0.125	98.0	—	—	No measurable pressure drop using 0.125 plate
12:55	0.500	96.0	94.0	24.49	0.500" plate on at 12:55 p.m.
1:10	0.500	96.0	80.0	24.46	Flow clear
1:25	0.500	96.0	78.5	24.45	500" plate off
1:40	0.750	89.25	69.0	24.43	0.750" plate on at 1:25 p.m. Gas sample collected
1:55	0.750	89.15	71.0	24.46	Flow clear
2:10	0.750	89.10	71.5	24.44	0.75" plate off
2:15	1.000	75.8	69.0	24.43	1.000" plate on at 2:10 p.m.
2:30	1.000	75.7	68.1	24.42	Flow clear
2:45	1.000	75.7	67.0	24.43	1.000" off
2:50	1.250	57.8	65.8	24.43	1.250" plate on at 2:45 p.m.
3:05	1.250	57.7	66.0	24.44	Flow clear
3:25	1.250	57.65	66.0	24.44	Test completed

BACK-PRESSURE TEST OF MACIE NO. 1 WELL

CALCULATIONS

By: R. D. Munnerlyn
Date of Test: July 24, 1954
Well Name: Macie No. 1
Location: SW/4, Sec. 34, Tp. 20 N, R. 26 E.
Apache County, Arizona
Producing Depth: 1032' to 1055'
Producing String: 8-inch casing
Producing Formation: Coconino Sandstone (Perm.)
Specific Gravity of Gas: 0.900 (Air = 1.00)

CALCULATION OF FLOW RATES

Run No.	Dead Weight Gage Reading p.s.i.	Gage Corr. p.s.i.	Baro. p.s.i.	Correct Working Pressure at the Wellhead p.s.i.a.	Orifice size, Inches	Coeff.	Flowing Temp. °F., Abs.	Rate of flow, Q, MCF per day at 14.4 p.s.i.a. and 60° F.
Shut-in	98.00	-.07	12.03	109.96	Shut-in	—	—	—
1	96.00	-.07	12.01	107.94	0.500	98.9817	538.5	485
2	89.10	-.07	12.00	101.03	0.750	226.867	531.5	1,048
3	75.70	-.07	12.00	87.63	1.000	411.369	527.0	1,655
4	57.65	-.06	12.00	69.59	1.250	665.815	526.0	2,129

$$Q = \frac{CP}{\sqrt{GT}}$$

Where Q = rate of flow, M cubic feet per day at a pressure of 14.4 p.s.i.a. and a temperature base of 60° F.;

C = Coefficient;

P = Upstream pressure, p.s.i.a.;

G = Specific gravity of gas (Air = 1.00);

T = Temperature of flowing gas, ° F. absolute.

Run No.

1. $Q = 98.9817 \times 107.94 \div \sqrt{0.9 \times 538.5} = 485 \text{ MCF/day}$
2. $Q = 226.867 \times 101.03 \div \sqrt{0.9 \times 531.5} = 1,048 \text{ MCF/day}$
3. $Q = 411.369 \times 87.63 \div \sqrt{0.9 \times 527.0} = 1,655 \text{ MCF/day}$
4. $Q = 665.815 \times 69.59 \div \sqrt{0.9 \times 526.0} = 2,129 \text{ MCF/day}$

HERR-MCGEE CORPORATION EXHIBIT NO. 6
SUMMARY OF SURFACE SHUT-IN PRESSURES, PSIG
 Pinta Dome Cocconino Sand Gas Pool,
 Apache County, Arizona

WELL Name	Initial 10/1/61	24 Hours 10/1/62	24 Hours 6/16/63	8 Hours 1/22/64	24 Hours 8/27/64	24 Hours 11/11/65	24 Hours 5/2/66	24 Hours 12/30/65	24 Hours 12/21/67	24 Hours 8/23/68
48,510 I (State 4)	99.4	96.0	92.80	89.4	86.1	N.M.	77.2	N.M.	N.M.	N.M.
48,572 II State 1-28	98.8	95.6	92.43	89.3	85.8	78.6	76.8	73.9	64.5	59.3
428,951 III Fee 1	99.3	95.5	92.20	89.2	85.6	78.5	77.0	73.1	64.4	59.3
128,668 IV State 3-A (State 3)	99.1	95.4	92.20	89.0	81.2	N.M.	77.7	73.2	64.4	59.3
1,066,013 V State 2	99.1	95.5	92.15	89.0	85.6	78.5	76.7	73.0	64.3	59.3
508,013 VI State 1	99.1	95.4	92.19	88.7	85.4	78.5	77.0	73.1	64.4	59.3
489,753 VII Fee 2	99.3	95.7	92.45	89.2	85.8	78.7	77.1	73.3	64.5	59.3
289,690 VIII State 1-2	99.6	96.7	93.85	91.2	N.M.	83.2	81.6	77.1	69.4	63.8
43,368 IX State 1-10	99.6	96.5	N.M.	N.M.	N.M.	83.0	81.6	77.0	67.0	63.8
479,968 Averages	99.3	95.8	92.53	89.4	85.1	79.9	78.1	74.2	65.4	60.3

N.M. - Not measured.

Alpha

HERR-MCGEE
 4 PRODUERS
 12/21/67
 8/23/68

KERN-MCGEE CORPORATION

EXHIBIT NO. 6

SUMMARY OF SURFACE SHUT-IN PRESSURES, PSIG

Pinta Dome Coconino Sand Gas Pool,
Apache County, Arizona

Unit Number	Well Name	Initial 10/1/61	24 Hours 10/1/62	24 Hours 6/16/63	8 Hours 1/22/64	24 Hours 8/27/64	24 Hours 11/11/65	24 Hours 5/2/66	24 Hours 12/30/66	
I	State 4-A (State 4)	99.4	96.0	92.80	89.4	86.1	N.M.	77.2	N.M.	N.M.
II	State 1-28	98.8	95.6	92.43	89.3	85.8	78.6	76.8	73.9	64.5 59.
III	Fee 1	99.3	95.5	92.20	89.2	85.6	78.5	77.0	73.1	64.4 59.
IV	State 3-A (State 3)	99.1	95.4	92.20	89.0	81.2	N.M.	77.7	73.2	64.4 59.
V	State 2	99.1	95.5	92.15	89.0	85.6	78.5	76.7	73.0	64.3 59.
VI	State 1	99.1	95.4	92.19	88.7	85.4	78.5	77.0	73.2	64.4 59.
VIII	Fee 2	99.3	95.7	92.45	89.2	85.8	78.7	77.1	73.3	64.5 59.
IX	State 1-2	99.6	96.7	93.85	91.2	N.M.	83.2	81.6	77.2	69.4 63.
X	State 1-10	99.6	96.5	N.M.	N.M.	N.M.	83.0	81.6	77.0	67.0 63.
	Averages	99.3	95.8	92.53	89.4	85.1	79.9	78.1	74.2	65.4 60.

N.M. - Not measured.

Alpha

PROCESSED
4/2/67
DEPT. OF REVENUE

22 HRS
12/21/67
24 HRS
9/23/68

UM.
ALES
7/1/68

KERR-MCGEE CORPORATION EXHIBIT NO. 6

SUMMARY OF SURFACE SHUT-IN PRESSURES, PSIG

Pinta Dome Coconino Sand Gas Pool,
Apache County, Arizona

Well Number	Well Name	Initial 10/1/61	24 Hours 10/1/62	24 Hours 6/16/63	8 Hours 1/22/64	24 Hours 8/27/64	24 Hours 11/11/65	24 Hours 5/2/66	24 Hours 12/30/66	24 Hours 12/31/67
48,510 I	State 4-A (State 4)	99.4	96.0	92.80	89.4	86.1	N.M.	77.2	N.M.	N.M.
48,572 II	State 1-28	98.8	95.6	92.43	89.3	85.8	78.6	76.8	73.9	64.5
428,951 III	Fee 1	99.3	95.5	92.20	89.2	85.6	78.5	77.0	73.1	64.4
128,668 IV	State 3-A (State 3)	99.1	95.4	92.20	89.0	81.2	N.M.	77.7	73.2	64.4
1,086,013 V	State 2	99.1	95.5	92.15	89.0	85.6	78.5	76.7	73.0	64.3
508,013 VI	State 1	99.1	95.4	92.19	88.7	85.4	78.5	77.0	73.2	64.4
42,153 VIII	Fee 2	99.3	95.7	92.45	89.2	85.8	78.7	77.1	73.3	64.5
280,690 IX	State 1-2	99.6	96.7	93.85	91.2	N.M.	83.2	81.6	77.2	69.4
43,368 X	State 1-10	99.6	96.5	N.M.	N.M.	N.M.	83.0	81.6	77.0	67.0
479,968	Averages	99.3	95.8	92.53	89.4	85.1	79.9	78.1	74.2	65.4

N.M. - Not measured.

Alpha

REPRODUCED
BY KERR-MCGEE
CORPORATION

GAS WELL OPEN FLOW POTENTIAL TEST REPORT

4-POINT TEST

Initial ☐ Annual ☒ Special ☐

Field: **Pinta Dome** Reservoir: **Coconino Sand** Test Date: **9-20-67**

Operator: **Kerr-McGee Corporation** Lease: **State** Well No.: **1**

County: **Apache** Location: **SE - SW - SW Section 34, 20N, 26E** Completion Date: **10-20-56** Total Depth: **1600'** T/Pay: **1027'** Producing Interval: **1098'-1100'**

Producing Thru TBG. Size: **2** Reservoir Temperature: **71°F** Wellhead Temperature: **71°F** CSG. Size: **6 5/8** WT/Ft.: **20** I.D.: **6.049** Set @: **1530' GL**

TBG. Size: **2** WT/Ft.: **20** O.D.: **6.049** I.D.: **6.049** Set @: **1530'** Gas Gravity (Separ): **0.908** Air. Prod. Length (L): **1099'** GL: **998** Gas-Liquid Hydrocarbon Ratio M/F per Bbl.: **1099'** Gravity of Liquid (Apl): **1098'**

Pipeline Connection: **Kerr-McGee Corporation** Type Taps: **Flange**

Multiple Completion (Dual or Triple): **Flange** Type production from each zone: **Flange**

OBSERVED DATA Flow Data

No.	Time of Flow Hours	(Line) Size	(Orifice) Size	Press. Roots psig	Diff. h wRoots	Tubing Press. psig	Casing Press. psig	Flowing Temp. °F
SI	14			Roots PSIG			66.5	
1.	1	4	2 1/4	4.61 42.4	4.00		66.1	58.6
2.	1	4	2 1/4	4.61 42.7	5.71		65.5	65.3
3.	1	4	2 1/4	4.62 42.5	6.80		64.4	70.4
4.	1	4	2 1/4	4.63 43.0	7.05		62.6	73.5

FLOW CALCULATIONS

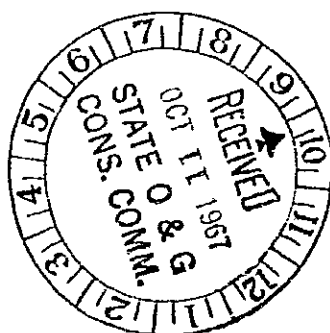
No.	Coefficient (24 Hr.)	$\sqrt{\frac{h}{w}}$	p m	Pressure psia	Flow Temp. Factor F t	Gravity Factor F	Compress. Factor F pv	Rate of Flow Q MCF/D
						In coefficient		
1.	30.087	18.44	54.2	1.0014			1.000	555.6
2.	30.087	26.32	54.5	.9949			1.000	787.9
3.	30.087	31.42	54.3	.9901			1.000	936.0
4.	30.087	32.64	54.8	.9872			1.000	969.5

Pc = 78.3 Pc² = 6.131 PRESSURE CALCULATIONS Fc = 0.5241 ; 1-e^{-s} = 0.070

	$\frac{P_w}{P_t}$ (psia)	P _t	F _c Q	(F _c Q) ²	(F _c Q) ² X 1-e ^{-s}	P _w	P _c - P _w	Cal. P _w	$\frac{P_w}{P_c}$
1.		6.068	.291	.085	.0060	6.074	.057	77.9	.9949
2.		5.975	.413	.171	.0120	5.987	.144	77.4	.9885
3.		5.806	.491	.241	.0169	5.823	.308	76.3	.9745
4.		5.535	.508	.258	.0181	5.553	.578	74.5	.9515

Absolute Potential **2,670** MCF/D **0.335**

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Engineer of the Kerr-McGee Corp. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.



Signature E. C. Smith, Jr.

STATE OF ARIZONA OIL & GAS
CONSERVATION COMMISSION

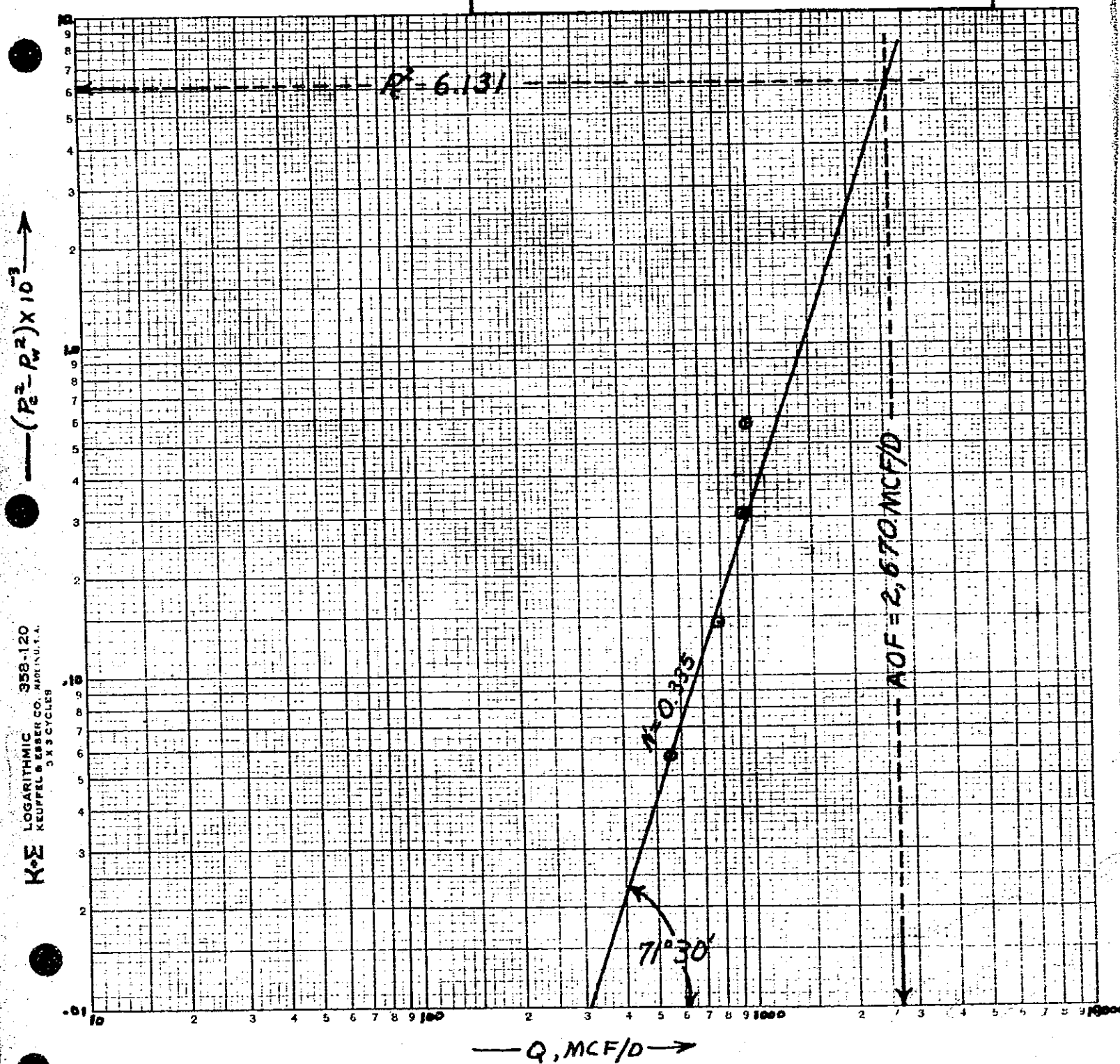
Gas Well Open Flow Potential Test Report (4-Point Test)

Form No. **18**

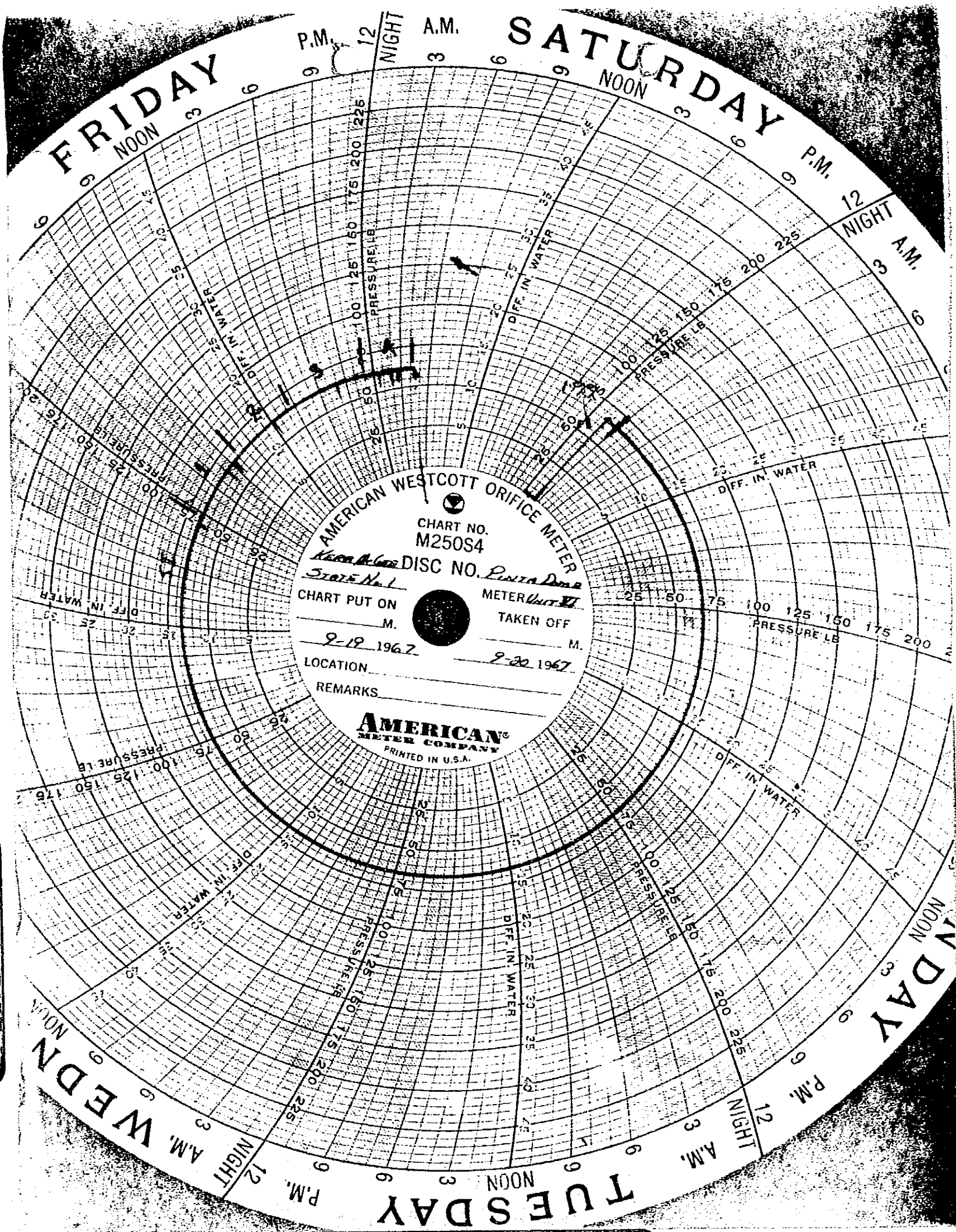
File two copies

Effective _____, 19____

4 POINT BACK PRESSURE TEST
 STATE #1, PINTA DOME FIELD
 APACHE CO., ARIZ. Tested - 9/20/57



K-E LOGARITHMIC 358-120
 KEUFFEL & ESSER CO. MADE IN U.S.A.
 3 X 3 CYCLES





KERR-McGEE INDUSTRIES # 1 State SW
Sec. 34-T20N-R26E APACHE CO. IN PINTA
DOME HELIUM FIELD POTENTIAL
6.1 Million Cubic Feet Per DAY. 3 1/2 Miles SW
of Navajo 87% Helium

Aug. 1962

Alpha

Nov. 1962 - May 1963



Pinta Field Discovery well - Kerr-Mcgee
#1 State (formerly Macie #1) SW Sec 34-
T20N-R26E. Apache Co. I.R. 10,500 mcfpd
AOF. Cody Harris, Tool Dresser on the
well filed alphabetically.

INFORMATION SUPPLIED BY WELL OWNERS

Well Name: Macie No. 1

Location: SW/4, Sec. 34, T. 20N, R. 26E, Apache County, Arizona

Well Owner: Arizona Gas and Chemical Corporation, Heard Building,
Phoenix, Arizona

Producing Formation: Coconino Sandstone (Permian)

Producing Depth: 1032 feet to 1055 feet

Casing: 60' - 16"
 60' - 793' - 10"
 793' - 864' - 8"
 864' - 1500' - 6"

OBSERVED WELLHEAD DATA

Producing Through: 8" casing (assumed)

Wellhead Connections:

Top

2" nipple welded to plate which is welded on end of 8" coupling
2" gate valve

Side

4" pipe, approximately 16' long, welded to 8" casing
4" M.I. stopcock on end of 4" line
4" x 2" C.I. bushing in stopcock

Although it was reported that the well contained a string of 6-inch casing, this was not verified. The wellhead consisted of 8-inch casing coupling protruding above a concrete block with a 4-inch flow line welded to the side of this 8-inch casing coupling. The top 8-inch coupling had a plate welded on top, to which a 2-inch connection was welded (see attached drawing and photograph). The 6-inch casing had either been removed from the well or was down the hole used as a liner between the bottom and 8-inch casing or some intermediate point. The gas flowed during the back-pressure test was treated as though being produced through 8-inch casing. Shut-in pressures taken through the top 2-inch connection equaled the pressures taken through the 4-inch flow line.

BACK-PRESSURE TEST OF MACIE NO. 1 WELL

Tested by: R. D. Munnerlyn, United States Bureau of Mines, Amarillo,
Texas.

Witnessed by:

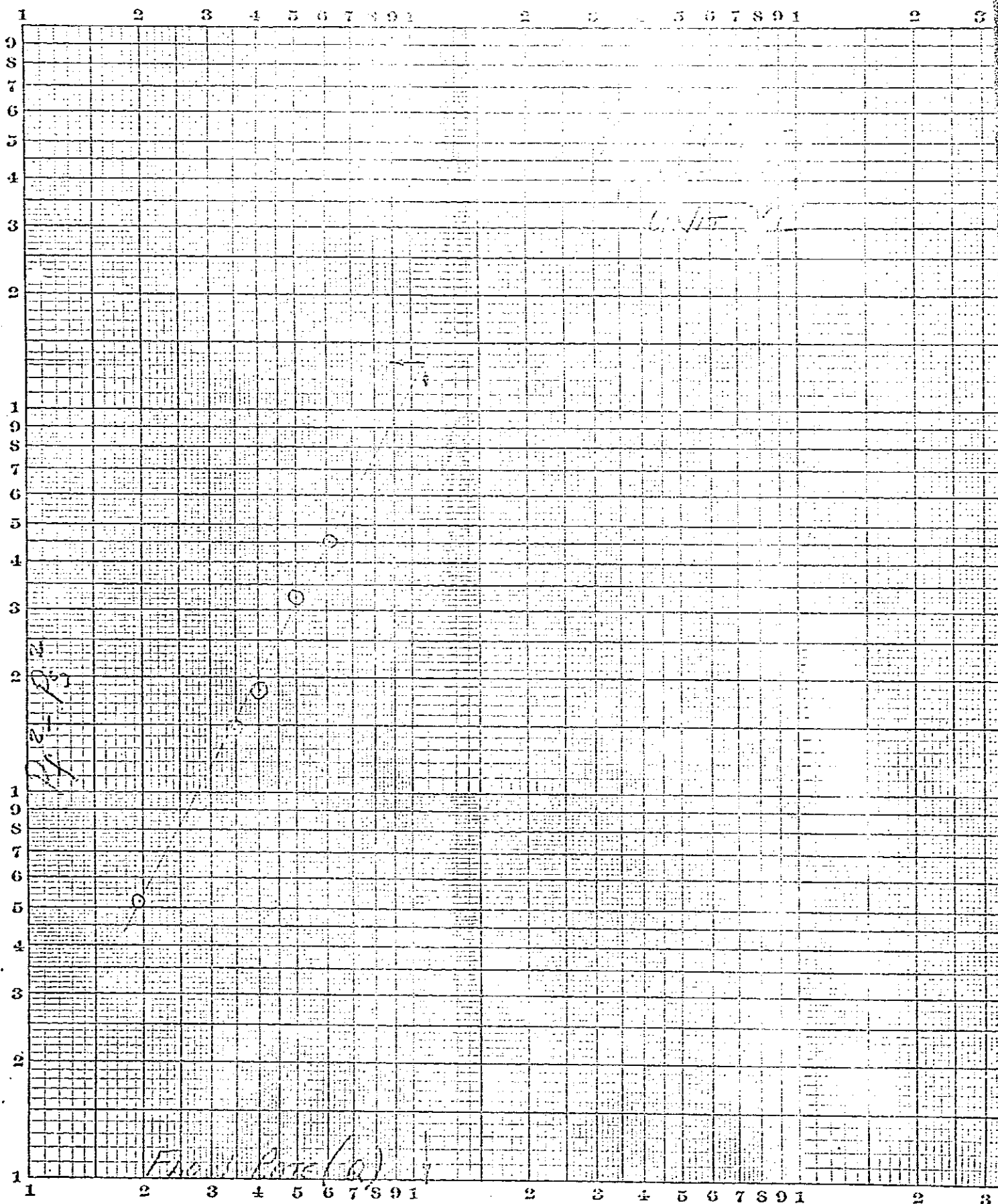
George B. Shelton, U. S. B. M., Amarillo, Texas
P. T. McGrath, U. S. G. S., Farmington, New Mexico
P. W. Johnson, U. S. G. S., Tucson, Arizona

Company Representatives:

Arthur A. Birnkrant, Chairman of Board
Serge Besoyan, President
Bernie Morganstern, Secretary
C. M. S. Kipling, Geologist
Charles H. Burkhart, Vice President
Bill Burkhart
Kirk Besoyan
Stephen Riess, Geologist

Visitors:

Fred Blair Townsend, Phoenix attorney
W. M. O'dell, State Land Commission, Phoenix, Arizona
W. G. Kneeland, Reporter, Arizona Republic, Phoenix, Arizona
Cody Harris, Navajo, Arizona
John Watt, Navajo, Arizona
B. N. Howell, C. F. Braun & Co., Alhambra, California
C. M. Sandland, C. F. Braun & Co., Alhambra California
Hans Lang, C. F. Braun & Co., Alhambra, California
John W. Harshbarger, U. S. G. S., Holbrook, Arizona



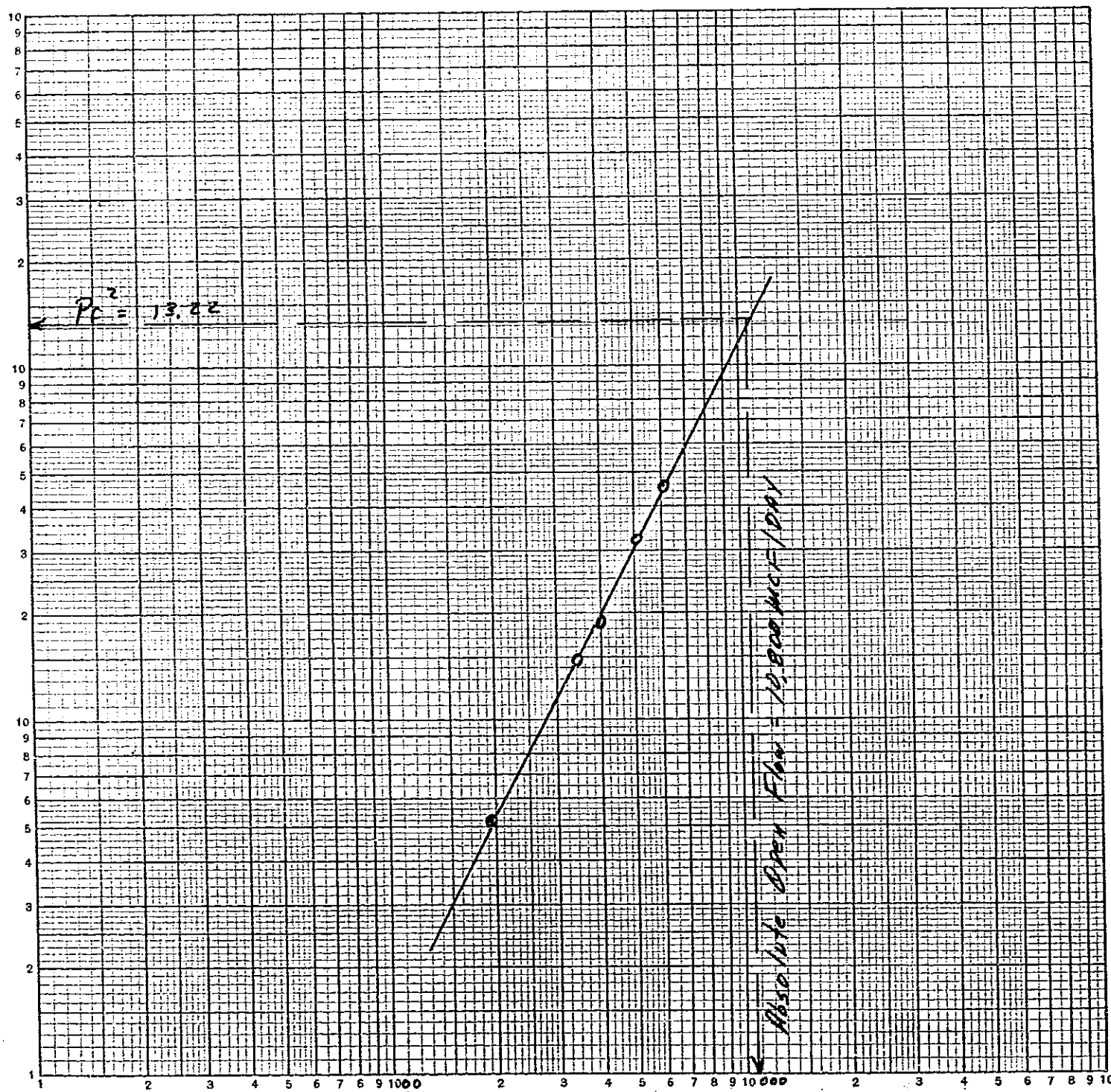
46588 STATE #1

10,500 MCF
ABSOLUTE OPEN FLOW

KERR-McGEE Oil Ind., Inc.
 State #1 (Metric #1)
 Apache, Ariz
 23 Sept 56

358-120 KUFFEL & ESSER CO.
 Logarithmic, 3 X 3 Cycles.
 MADE IN U.S.A.

$P_0^2 - P_s^2 \rightarrow$



Q (mcf/day) \rightarrow

024

STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION
PHOENIX, ARIZONA FORM O&G 53
Form Prescribed Under Oil and Gas Conservation Act of 1951

CAPACITY TEST REPORT
BACK PRESSURE TEST OF GAS WELL
(Critical Flow Prover or Orifice Meter)
OPEN FLOW POTENTIAL TEST
Test Date September 23, 1958

Date May 25 19 58
Operator Kerr-McGee Oil Industries, Inc. Field Pinta
Lease State #1 (Formerly Macie #1) Unit VI Well Ac. 640
Acres Under Well 640 Connection None
Reservoir Coconino County Apache
Sand Depth 1027-1100' /Perf. 1095-1097 Csg. @ 6-5/8-1550 Tubing @ None
520X1000
Gr. of Gas .901 METALOX Prover 4" Prover
Is Volume Corrected to sand face? Yes

Barometric Pressure Used 12.0 psi

Closed Pres.

99.1

LBS.

Back Pressure Test

Orifice Size	Coeff 24 Hr.	Working Pressure	If Orifice Meter used			Volume
			2 Pc	2 PW	Lb.	
		PSIG				
1	22.007	96.5	.52			1,931
1-3/8	41.210	91.5	1.47			3,449
1-1/2	49.106	89.2	1.87			4,019
1-3/4	67.082	81.6	3.24			5,078
2	88.628	73.5	4.53			6,128

Volume - 24 Hour 10,800 - Slope of curve n = .539 MCF.
Angle of curve = 610 - 411

Open Flow Test

Shut In Pres. 99.1 Time Shut In 72 hours Water - Oil - Etc. REMARKS
(Important)

Producing Through Casing

TIME	READING	LIQUID USED	SPRING GAUGE
15 Min.			
20 Min.			
25 Min.			
30 Min.			

Test Until Two Readings Check

OPEN FLOW CAPACITY _____ MCF per 24 Hrs.

Gas Well

Very light spray of water

SIGNATURES

BOARD _____

CON. _____

CO. _____

OTHER _____

(ACCOMPANY THIS REPORT WITH A BACK PRESSURE CHART)

5/12/58

40573

40583

40589

KERR-McGEE OIL INDUSTRIES, INC. - State #1
 (s/a Apache Oil & Helium State #1 -
 s/a Kipling Petroleum - Macie State #1)

Location: SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 34, T. 20 N., R. 26 E., Apache County
 2 miles S. of Pinta and 36 miles east of Holbrook.

This log was made from a study of the ore samples by the Authors, in the U. S.
 Geological Survey Ground Water Office, Tucson, Arizona, August 23, 1954.
 (Study made by Ralph Arnold and Wm. Odell from samples submitted by Apache
 Oil & Helium in 1954.)

0-60	Typical red sandstone, top of koenkopi or bottom Chinle
85	Dark lavender, Painted Desert color
100	Light red sandstone
150	Purplish sandstone
180	Red Shale
260	Light red, purplish sandstone
290	Still lighter red
380	Medium coarse gray sandstone
480	Purplish red sandstone
540	Gray clay and shale
560	Deep, dark purple shale and sandstone
570	Gray sandstone and shale
605	Light purplish sandstone and shale
620	Darker " " "
630	Light gray " "
635	Gray " "
650	Light purplish " "
680	Gray Sandstone " "
690	Mixed gray and purple sandstone
700	Reddish sandstone
760	Dark purple, little gray layers
765	Light reddish brown
770	Dark reddish brown
775	Dark purple
785	Reddish purple sandstone
795	Dark gray sandstone
820	Light reddish purple
830	Sand and light red shale
841	Dark reddish purple sand
845	Light purple sand
875	Darker purple sand
880	Light reddish purple sand
885	Gray sandstone
900	Light reddish purple sandstone
920	Reddish purple sandstone
925	Dark reddish purple
930	Very light gray sandstone
935	Light reddish purple
945	Gray and light reddish purple sandstone
950	Light red
1010	Light and dark brown sandstone - no purple
1031	Purplish brown
1035	White hard sandstone-helium gas came in here - Coconino
1040	Yellow powdery sand - Coconino
1045	Yellowish sandstone
1055	Hard white sandstone
1076	Light brown sandstone
1080	Yellow powdery sand
1345	Soft fine sandstone, more like silt - Coconino
1350	Reddish to tan sandstone (Top Supai)
1375	Yellow silt (Coconino?)
1385	Reddish fine grained sand
1435	Reddish, coarser grained sand
1450	Brownish red shale
1460	White sand
1485	Still more reddish sandstone
1495	Red Coarse thin sandstone
1500	Finer grained sandstone and shale
1505	Fine reddish sandstone
1510	Coarse grained reddish sandstone
1515	Very coarse dark gray sandstone
1520	Red Supai

3/21/58

46588

DISTRICT NO. 10

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION
MULTI-POINT BACK PRESSURE TEST
FOR GAS WELL

FORM GWT-10

Company Kerr-McGee Oil Industries, Inc. Lease State Well No. 1
 New Well x Retest Date of Test 23 September 19 56
 Field County Apache, Arizona Acres
 Sec. 34 SW T20N SW R26E Loc. Apache, Arizona Conn.
 Casing 6 5/8 Wt. 20 I.D. 6.042 Set at 1550 Perf. 1095 To 1097
 Liner Wt. I.D. Set at Perf. To
 Tubing Wt. I.D. Set at Perf. To
 Gas Pay From 1095 To 1097 L 1096 G .901 GL 987 Barometric 12.0
 e^s 1.071 F_d 0.5947 Well Shut In 72+ Hours Before Test
 Size of Prover 4 Size of Meter Run Type of Connection
 REMARKS:

OBSERVED DATA

RUN NO.	SIZE METER RUN OR PROVER ORIFICE	METER PRESSURES			FLOW TEMP	WELLHEAD		DURATION OF FLOW IN HOURS
		STATIC Psig	Pm Psia	DIFFERENTIAL Inches-Roots		WP Psig	Pw Psia	
1	1				70	96.5	108.5	1 1/2
2	1 3/8				70	91.5	103.5	1 1/2
3	1 1/2				70	89.2	101.2	1 1/2
4	1 3/4				70	81.6	93.6	1 1/2
5	2				70	73.5	85.5	1 1/2

FLOW CALCULATIONS

RUN NO.	COEFF. "C" (24 HR.)	$h_w P_m$	$\sqrt{h_w P_m}$	WORKING PRESSURE ON PROVER		FLOW TEMP. FACTOR F_{tf}	GRAVITY FACTOR F_g	FLOW RATE $Q = M^2 cfd @ 14.65$
				Psig	Psia			
1	22.007			96.5	108.5	.9905	.8165	1.931
2	41.210			91.5	103.5		(.8087)	3.449
3	49.106			89.2	101.2			4.019
4	67.082			81.6	93.6			5.078
5	88.628			73.5	85.5			6.128

PRESSURE CALCULATIONS

(All Squared Pressures In Thousands)

S.I.P. 99.1 Psig
 Bar. 12.0
 P_c 111.1 Psia P_c^2 12.34 x e^s 1.071 = P_f^2 13.22

RUN NO.	P_w^2	$e^s P_w^2$	$F_d Q$	F^2	R^2	P_s^2	$P_f^2 - P_s^2$
1	11.77	12.61	1.15	1.31	.09	12.70	.52
2	10.71	11.47	2.05	4.01	.28	11.75	1.47
3	10.24	10.97	2.39	5.40	.38	11.35	1.87
4	8.76	9.38	3.02	8.19	.60	9.98	3.24
5	7.31	7.83	3.64	12.18	.86	8.69	4.53

Slope of Curve: $n =$.539
 Angle of Curve: $\theta =$ 61° 41'
 Absolute Open Flow: 10,800 MCF/Day

R. R. COMMISSION:

Company:

Pipe Line:

Others:

AFFIDAVIT

STATE OF _____

COUNTY OF _____

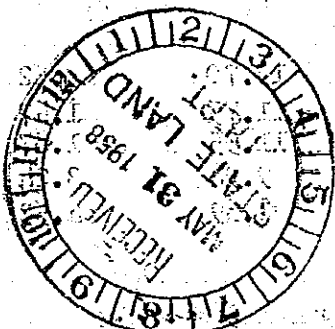
BEFORE me, the undersigned authority, on this day personally appeared _____, known to me to be the person whose name is subscribed to this instrument, who, after being by me duly sworn on oath, states that he is employed by or associated with _____

in the capacity of _____; that this test was made by affiant or under the supervision of affiant; that this test was made according to the Rules and Regulations of the indicated Field as of this date; that the test data and factual data shown hereon are true and correct; and that no pertinent matter inquired about in said report has been omitted.

Subscribed and Sworn to before me on this the _____ day of _____ 19____

Notary Public in and for _____

County, _____



Form O & G 57
Sheet No. 1

1. Form Prescribed Under Oil and Gas Conservation Act 1951

Lease **Kerr-McGee State** Well No. **1** Field **Finta Dome**

Sec. SW/4 SW/4 34 Twp. 20 North Rge. 26 East Cty. Apache Co. Pool Pinta Dome

Producer **Kerr-McGee Oil Industries, Inc.**

Address all correspondence concerning this form to: Kerr-McGee Oil Industries, Inc.
Attention: C. F. Miller

Street Kerr-McGee Building City Oklahoma City State Oklahoma

The above named producer hereby authorizes Kerr-McGee Oil Industries, Inc.
(Name of Transporter)

Whose principal place of business is Kerr-McGee Building, Oklahoma City, Oklahoma
(Street) (City) (State)

And whose Field Address is: Kerr-McGee Oil Industries, Inc., P. O. Box 15, Navajo
(on U. S. Highway 66), Arizona

to transport 100 % of the ~~oil~~ produced from the Drilling Unit designated above until further notice.

Other transporters transporting Oil or Gas from this drilling unit are:

[illegible]

REMARKS:

(OVER)

NET WELL COMPLETION
(OFFICIAL COMPLETION GAUGE)

Date of First Production Test September 23, 1956 Date of Completion Gauge September 23, 1956

Total Oil saved while testing well prior to the date of the official completion gauge None
Barrels.

Production Gauge on 24 Hour Basis 0 Bbl. Oil; Very light spray % Water; 6128 MCF Gas.

The undersigned certifies that the Rules and Regulations of the Commissioner have been complied with except as noted above, and that the transporter('s) authorized to transport the percentage of Oil and/or Gas produced from the above described drilling unit, and that this authorization will be valid until further notice to the transporter named herein or until cancelled by the Commissioner.

Executed this the 24 day of October 19 61

Kerr-McGee Oil Industries, Inc.
(Company or Operator)

C. F. Miller, Manager Prod. Dept.
(Affiant) (Title)

STATE OF Oklahoma

COUNTY OF Oklahoma

Before me, the undersigned authority, on this day personally appeared _____

C. F. Miller, known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is authorized to make this report and has knowledge of the facts stated herein and that said report is true and correct.

Subscribed and sworn to before me this the 24 day of October 19 61

My Commission Expires Oct. 25, 1963

Rita Lee
Notary Public In and For Oklahoma
County, Oklahoma

Approved [Signature]
COMMISSIONER

BY: _____

(FOLLOW INSTRUCTIONS IN INSTRUCTION
SHEET)

STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O & G 52

Form Prescribed Under Oil and Gas Conservation Act of 1951
WELL COMPLETION REPORT SEE ATTACHED LETTER
(File in Duplicate)

Operator Kerr-McGee Oil Ind., Inc. Field Wildcat
Street P.O. Box 337 Pool
City Sunray State Texas County
Lease Name Lacie Well No. 1 Acres in Unit 320
Location Apache County SE-SW-SW Sec. 34 Twp. 20N Rge. 26E
Elevation DF GR 5780' Electric Log Run Gamma Ray, Neutron, 9-119 56
Number of Crude Oil Producing Wells on this Lease, including this well None
Has Authorization to Transport Oil or Gas from Well, Form O&G 57 been Filed? No

NO OFFICIAL COMPLETION GAUGE - SHUT IN GAS WELL

Date Test Commenced 19 Hour M, Date Test Completed 19 Hour M
Length of Test Hours Minutes

For Flowing Well:

For Pumping Well:

Flowing pressure on Tbg. lbs./sq.in. Length of stroke used inches

Flowing pressure on csg. lbs./sq.in. Number of strokes per min. inches

Size tbg. in. No. ft. run Size of working barrel inches

Size choke in. Type choke Size tubing. in. No. ft. run inches

Length in. Shut in pressure 89.9

If flowing well, was this well flowed for the entire duration of this test without the use of swab or other artificial flow device? cu.
ft. gas per bbl.oil. Result of this test (bbls. net oil per 24 hrs.)
(100% tank tables.)

Gas-oil ratio of this well is cu. ft. of gas per bbl. of oil.

Per cent water produced during this test inches

Gravity of oil produced during this test (Corrected to A. P. I. 60° F)

Name of Pipe Line or other carrier

If perforated: No. Shots 8 From 1098' To 1100' Date Perforated 9-20-56

Date well Spudded Unknown 19 50, Date Well Completed 20 October 19 56

Top Pay 1027 Ft. Total depth of well 1200' PB Ft. from 1550'

CASING LINER AND TUBING RECORD

String	Size	Wt./Ft.	Name and Type	Amount Ft. In.	Depth Set at	Perforated From To
	12"			15	15 GL	
	10"			640	640 GL	
	8 5/8"			840	840 GL	
	6 5/8"			1530	1530 GL	1098' 1100'

CEMENT AND TESTING RECORD

Size of Hole	String	Where Cement Placed	No. Sacks of Cement	Method Used	Pressure Applied in Testing	Hardness of Cement Drilled	Type of Cement
16"	12"	Outside	7	dump			Common
12"	10"	None		Mudded in			
10"	8 5/8"	Bottom	25	displaced			Common
8"	6 5/8"	None		Mudded in			

CHEMICAL OR SHOOTING RECORD BEFORE COMPLETION

Size	Chemical or	Quantity	Date	From	Depth to

AFFIDAVIT

I, Otto C. Barton, being first duly sworn on oath state that I have knowledge of the facts and matter herein set forth and that the same are true and correct.

46588

Representative of Company

Subscribed and sworn to before me this 17 day of November 19 56

Moore

County, TEXAS

My Commission expires: 6-1-57

TEXAS

Notary Public

46588

DISTRICT NO. 10

~~RAILROAD COMMISSION OF TEXAS~~
OIL AND GAS DIVISION
MULTI-POINT BACK PRESSURE TEST
FOR GAS WELL

FORM GWT-10

Company Kerr-McCree Oil Industries, Inc. Lease State Well No. 1
 New Well x Retest _____ Date of Test 23 September 19 56
 Field _____ County Apache, Arizona Acres _____
 Sec. 34 W2 T20N R26E Loc. Apache, Arizona Conn. _____
 Casing 6 5/8 Wt. 20 I.D. 6.049 Set at 1550 Perf. 1095 To 1097
 Liner _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____
 Tubing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____
 Gas Pay From 1095 To 1097 L 1096 G .901 GL 987 Barometric 12.0
 e^s 1.071 F_d 0.5947 Well Shut In 72+ Hours Before Test
 Size of Prover 4 Size of Meter Run _____ Type of Connection _____

REMARKS:

OBSERVED DATA

RUN NO.	SIZE METER RUN OR PROVER ORIFICE	METER PRESSURES			FLOW TEMP	WELLHEAD		DURATION OF FLOW IN HOURS
		STATIC Psig	Pm Psia	DIFFERENTIAL Inches-Roots		WP Psig	Pw Psia	
1	1				70	96.5	108.5	1 1/2
2	1 3/8				70	91.5	103.5	1 1/2
3	1 1/2				70	89.2	101.2	1 1/2
4	1 3/4				70	81.6	93.6	1 1/2
5	2				70	73.5	85.5	1 1/2

FLOW CALCULATIONS

RUN NO.	COEFF. "C" (24 HR.)	$h_w P_m$	$\sqrt{h_w P_m}$	WORKING PRESSURE ON PROVER		FLOW TEMP. FACTOR F_{tf}	GRAVITY FACTOR F_g	FLOW RATE $Q = M^2 cfd @ 14.65$
				Psig	Psia			
1	22.007			96.5	108.5	.9905	.8165	1.931
2	41.210			91.5	103.5		(.8087)	3.449
3	49.106			89.2	101.2			4.019
4	67.082			81.6	93.6			5.078
5	88.628			73.5	85.5			6.128

S.I.P. 99.1 PsigPRESSURE CALCULATIONS
(All Squared Pressures in Thousands)Bar. 12.0 P_c 111.1 Psia

$$P_c^2 - P_f^2 = 12.34 \times e^s = 1.071 = P_f^2 - 13.22$$

RUN NO.	P_w^2	$e^s P_w^2$	$F_d Q$	F^2	R^2	P_s^2	$P_f^2 - P_s^2$
1	11.77	12.61	1.15	1.31	.09	12.70	.52
2	10.71	11.47	2.05	4.01	.28	11.75	1.47
3	10.24	10.97	2.39	5.40	.38	11.35	1.87
4	8.76	9.38	3.02	8.49	.60	9.98	3.24
5	7.31	7.83	3.64	12.18	.86	8.69	4.53

Slope of Curve: $n = .539$
 Angle of Curve: $\theta = 61^\circ 41'$
 Absolute Open Flow: 10,800 MCF/Day

R. R. COMMISSION:

Company: Chas E. Carter

Pipe Line: _____

Others: _____

AFFIDAVIT

STATE OF _____

COUNTY OF _____

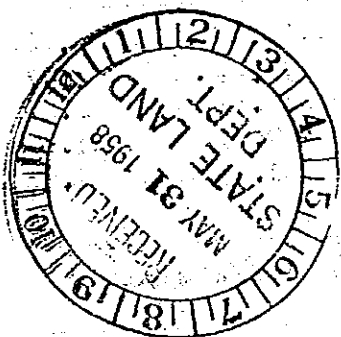
BEFORE me, the undersigned authority, on this day personally appeared _____, known to me to be the person whose name is subscribed to this instrument, who, after being by me duly sworn on oath, states that he is employed by or associated with _____ in the capacity of _____;

that this test was made by affiant or under the supervision of affiant; that this test was made according to the Rules and Regulations of the indicated Field as of this date; that the test data and factual data shown hereon are true and correct; and that no pertinent matter inquired about in said report has been omitted.

Subscribed and Sworn to before me on this the _____ day of _____ 19 _____

Notary Public in and for

County, _____



STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O&G 53

Form Prescribed Under Oil and Gas Conservation Act of 1951

CAPACITY TEST REPORT
BACK PRESSURE TEST OF GAS WELL
(Critical Flow Prover or Orifice Meter)
OPEN FLOW POTENTIAL TEST

Test date September 23, 1956.

Date 26 May 1958

Operator Kerr-McGee Oil Industries, Inc. Field _____

Lease State #1 (Formerly Macie #1) Well Ac. _____

Acres Under Well 320 Connection none

Reservoir Pinta Structure (Cocorocina) County Apache

Sand Depth 1027'-1100' - Perforations 1095'-1097' Csg. @ 5/8" @ 1550' Tubing @ none

Gr. of Gas .901 Size Line and Meter or Prover 4" prover

Is Volume Corrected to sand face? Yes

Barometric Pressure used 12.0 P.S.I.

Orifice Size	Closed Pres. 99.1 Lbs.		Back Pressure Test		
	Coeff. 24 Hr.	Working Pressure P.S.I.g.	Pc	Pw	Volume M.C.F.
1	22.007	96.5	.52		1.931
1 3/8	41.210	91.5	1.47		3.449
1 1/2	49.106	89.2	1.87		4.019
1 3/4	67.082	81.6	3.24		5.078
2	88.628	73.5	4.53		6.128

Volume - 24 Hour 10,800 MCF - Slope of curve N .539 angle of curve 61° - 4.0 M.C.F.

Open Flow Test

Shut In Pres. 99.1 Time Shut In 72 hrs. 4 REMARKS
Water - Oil - Etc. (Important)

Producing Through Gasing

TIME	READING	LIQUID USED	SPRING GAUGE
15 Min.			
20 Min.			
25 Min.			
30 Min.			

Test Until Two Readings Check

OPEN FLOW CAPACITY _____ MCF per 24 Hrs.

Very light spray water.

SIGNATURES

BOARD _____
CON. W. O. Barton
CO. _____
OTHER _____

(ACCOMPANY THIS REPORT WITH A BACK PRESSURE CURVE)

Back Pressure test attached

STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION
PHOENIX, ARIZONA FORM O&G 53
Form Prescribed Under Oil and Gas Conservation Act of 1951

CAPACITY TEST REPORT
BACK PRESSURE TEST OF GAS WELL
(Critical Flow Prover or Orifice Meter)
OPEN FLOW POTENTIAL TEST
Test Date September 10, 1958

Date May 11 1958
Operator Kerr-McGee Oil Industries, Inc. Field Pinta
Lease State #1 (Formerly Macie #1) Unit VI Well Ac. 640
Acres Under Well 640 Connection None
Reservoir Coconino County Apache
Sand Depth 1027-1100' /Perf. 1095-1097' Csg. @ 6-5/8"-1550' Tubing @ None
Gr. of Gas .901 STECKLER Prover 1" Prover
Is Volume Corrected to sand face? Yes

Barometric Pressure Used 12.0 psi
Closed Pres. 99.1 LBS.

Orifice Size	Coeff 24 Hr.	Working Pressure	Back Pressure Test			Volume
			2 Pc	2 PW	Lb.	
		PSIG				
1	22.007	96.5	.52			1,931
1-3/8	41.210	91.5	2.37			3,449
1-1/2	49.105	89.2	1.88			4,019
1-3/4	67.082	81.6	3.24			5,078
2	88.628	73.5	4.53			6,128

Volume - 24 Hour 10,800 - Slope of curve $n = .539$ MCF.
Angle of curve = $610 - 411$

Open Flow Test

Shut In Pres. 99.1 Time Shut In 72 hours Water - Oil - Etc. REMARKS
(Important)

Producing Through Casing

TIME	READING	LIQUID USED	SPRING GAUGE
15 Min.			
20 Min.			
25 Min.			
30 Min.			

Test Until Two Readings Check

OPEN FLOW CAPACITY _____ MCF per 24 Hrs.

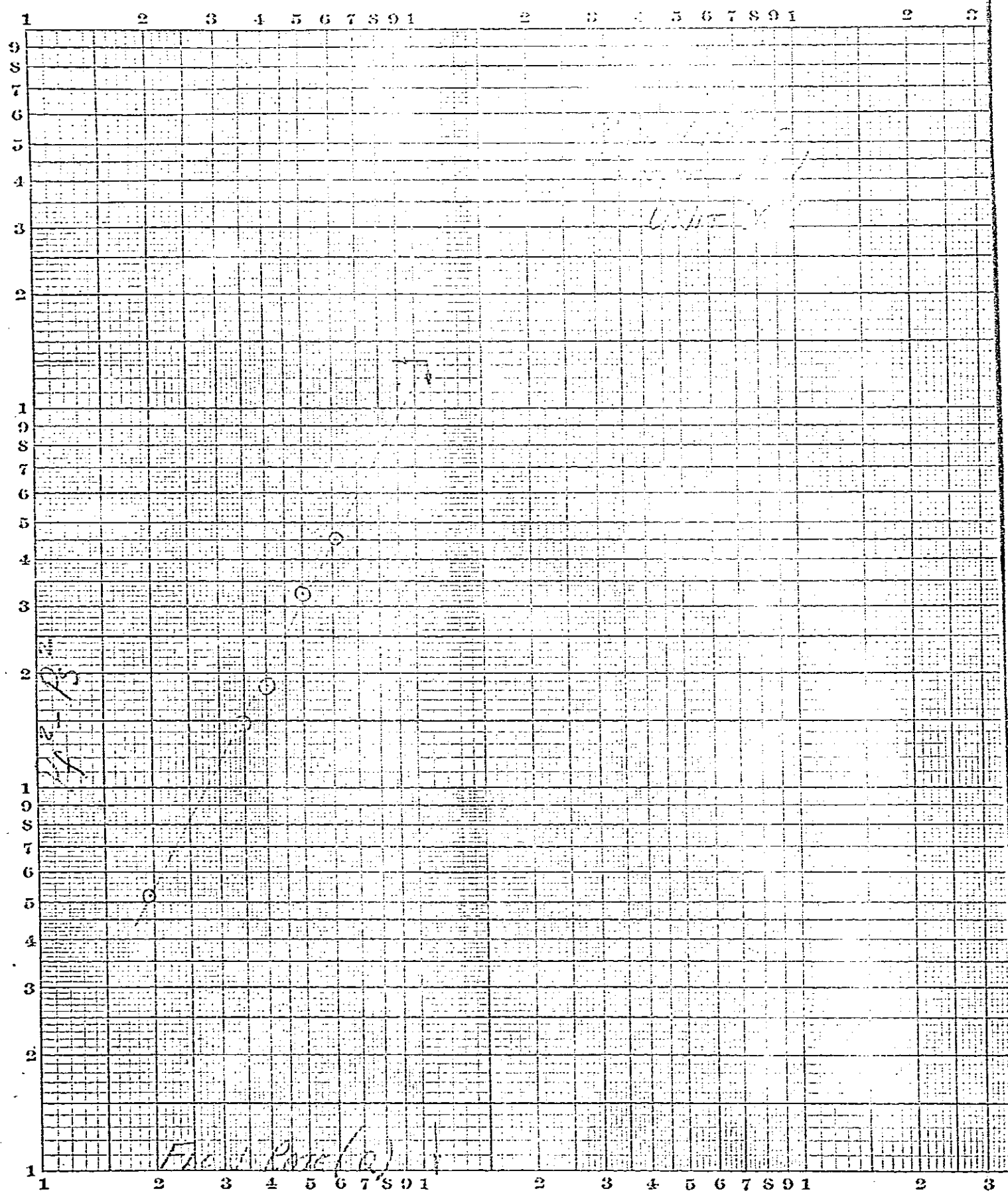
Gas Well
Very light spray of water

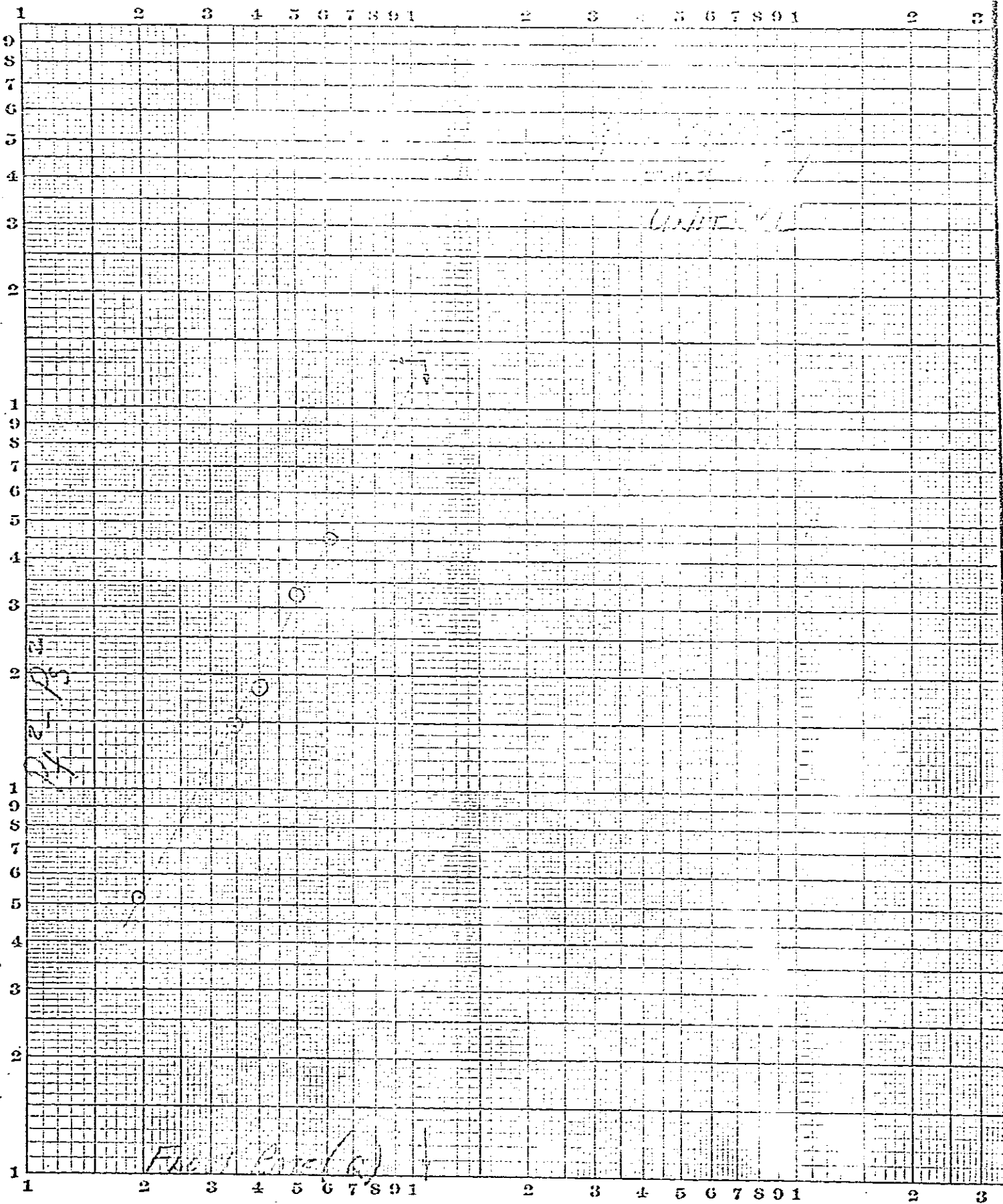
SIGNATURES
BOARD _____
CON. _____
CO. _____
OTHER _____

(ACCOMPANY THIS REPORT WITH A BACK PRESSURE CHART)

5/12/58

46558





46588 STATE #1 10800 MCF
ABSOLUTE OPEN FLOW

DISTRICT NO. 10

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION
MULTI-POINT BACK PRESSURE TEST
FOR GAS WELL

FORM GWT-10

Company Herr-Kelce Oil Industries, Inc. Lease 100 Well No. 7
New Well x Retest Date of Test 19 56
Field County Acres
Sec. 34 Blk. 2000 Str. 7000 Loc. Conn.
Casing 6 5/8 Wt. 20 I.D. 4.500 Set at Perf. To
Liner Wt. I.D. Set at Perf. To
Tubing Wt. I.D. Set at Perf. To
Gas Pay From 1025 To 2007 L 10.5 G 0.001 GL 4.7 Barometric 30.0
 e^s 1.071 F_d 0.5012 Well Shut in 720 Hours Before Test
Size of Prover 4 Size of Meter Run Type of Connection

REMARKS:

OBSERVED DATA

RUN NO.	SIZE METER RUN OR PROVER ORIFICE	METER PRESSURES			FLOW TEMP	WELLHEAD		DURATION OF FLOW IN HOURS
		STATIC Psig	Pm Psia	DIFFERENTIAL Inches-Roots		WP Psig	Pw Psia	
1	1				70	85.5	70.5	1.0/1
2	1 3/8				70	85.5	70.5	1.0/1
3	1 1/2				70	85.5	70.5	1.0/1
4	1 3/4				70	85.5	70.5	1.0/1
5	2				70	85.5	70.5	1.0/1

FLOW CALCULATIONS

RUN NO.	COEFF. "C" (24 HR.)	h_{wPm}	$\sqrt{h_{wPm}}$	WORKING PRESSURE ON PROVER		FLOW TEMP. FACTOR F_{tf}	GRAVITY FACTOR F_g	FLOW RATE $Q = \frac{C \sqrt{h_{wPm}}}{F_{tf} F_g}$ 0-14.65
				Psig	Psia			
1	22.007			85.5	70.5	1.000	0.765	1.0
2	41.210			85.5	70.5			2.0
3	49.106			85.5	70.5			3.0
4	67.002			85.5	70.5			4.0
5	88.628			85.5	70.5			5.0

S.I.P. 92.1 PsigBar. 12.0 P_c 111.1 PsiaPRESSURE CALCULATIONS
(All Squared Pressures in Thousands)

$$P_c^2 - P_s^2 = P_f^2 \quad P_c^2 \text{ } 12.31 \times e^s \text{ } 1.071 = P_f^2 \text{ } 13.20$$

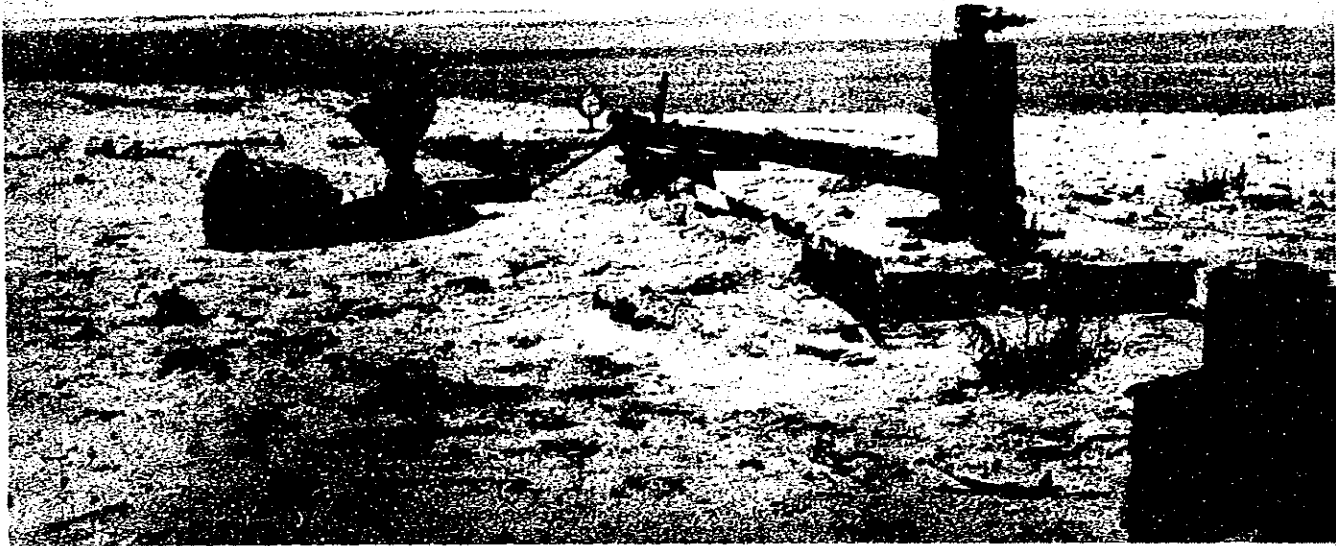
RUN NO.	P_w^2	$e^s P_w^2$	$F_d Q$	F^2	R^2	P_s^2	$P_f^2 - P_s^2$
1	11.77	12.61	1.25	1.31	.00	13.20	
2	10.71	11.47	2.00	4.00	.01	12.25	1.00
3	10.24	10.97	2.25	5.06	.01	11.30	1.00
4	8.76	9.33	3.00	9.00	.01	9.29	1.00
5	7.31	7.83	3.25	10.56	.01	8.34	1.00

Slope of Curve: $n = .539$ Angle of Curve: $\theta = 61^\circ 13'$ Absolute Open Flow: 10,800 MCF/Day

46588

R. R. COMMISSION:

Company: Pipe Line: Others:

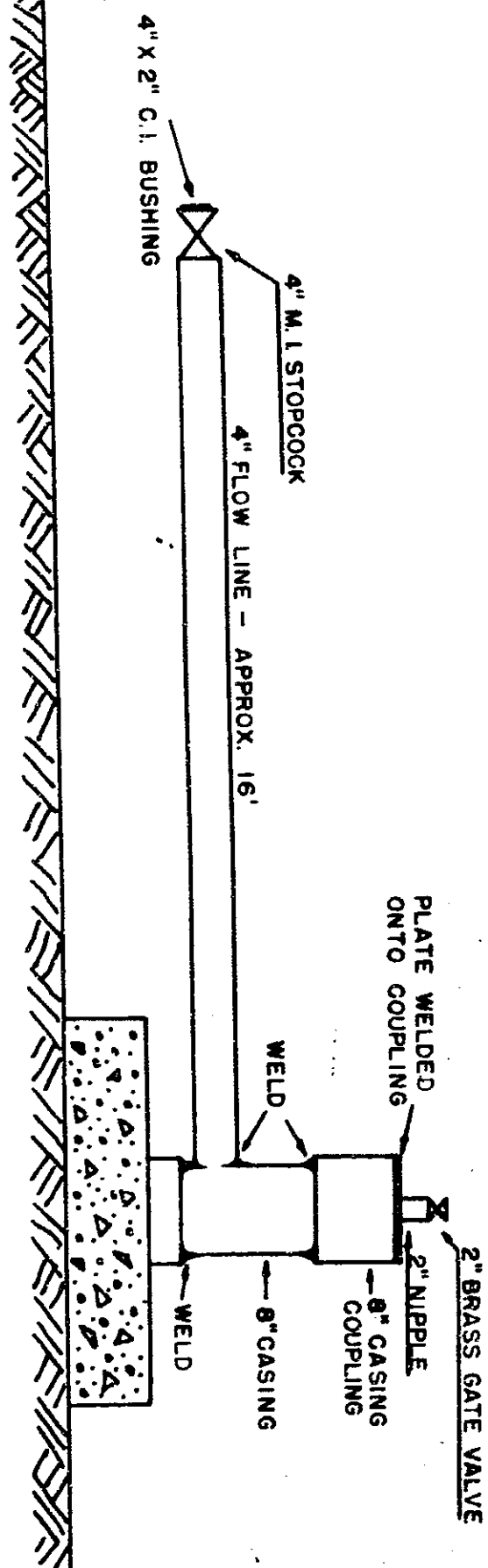


MASIE NO. 1 WELL

SW/4 Sec. 34, T.20N., R.26E.

Apache County, Arizona

46583



MACIE NO. 1 WELL
 SW/4 SEC. 34, T20N, R26E.
 APACHE COUNTY, ARIZONA

46° 22'

■ - Macie #1 -- SE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 34, 20 N, 26 E

■ - Macie #2 -- SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 33, 20 N, 26 E

■ - Macie #3 -- NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 34, 20 N, 26 E

1 - 1016 -- Victor J. & Eva Bonnat

2 - 1095 -- Walter Pocock & Wm. Lighthall

3 - 1315 -- Burton J. Lewin

4 - 1371 -- Ira D. Aten

5 - 1373 -- P. G. Beckett

6 - 1574 -- Marian H. Andrews

7 - 1575 -- Orville R. Price & Jos. P. Yurges

8 - 1598-1 -- R. Arnold & Nevada Reid

9 - 1598-2 -- R. Arnold & Nevada Reid

10 - 1788 -- Jos. P. Yurges & Jack V. Lee

11 - 1924 -- Norma Townsend

12 - 2088 -- C. A. Martin

13 - 2089 -- C. A. Martin

14 - 2090 -- John & Pearl Gould

15 - 2091 -- Willis Sargent

16 - 2092 -- Clarendon Mower

17 - 2093 -- Tom McBirnie

18 - 2094 -- John S. Kruglick

19 - 2098 -- Tom McBirnie

20 - 2099 -- Helen E. Barfoot

21 - 2113 -- Kerr-McGee Oil Industries, Inc.

22 - 2114 -- Kerr-McGee Oil Industries, Inc.

23 - 2115 -- Kerr-McGee Oil Industries, Inc.

24 - 2116 -- Kerr-McGee Oil Industries, Inc.

25 - 2117 -- Kerr-McGee Oil Industries, Inc.

26 - 2118 -- Kerr-McGee Oil Industries, Inc.

27 - 2120 -- Kerr-McGee Oil Industries, Inc.

28 - 2126 -- Chas. A. Martin

29 - 2252 -- H. L. Hutchison, Trustee

30 - 2253 -- Margaret Wood

31 - 2254 -- John R. & Faye Watt

32 - 2255 -- Pauline & L. Wm. Kenyon

33 - 2256 -- Eva Bonnat

34 - 2257 -- Eva Bonnat

35 - 2278 -- Chas. Kalil & Paul Wickham

36 - 2312 -- Roy Seward

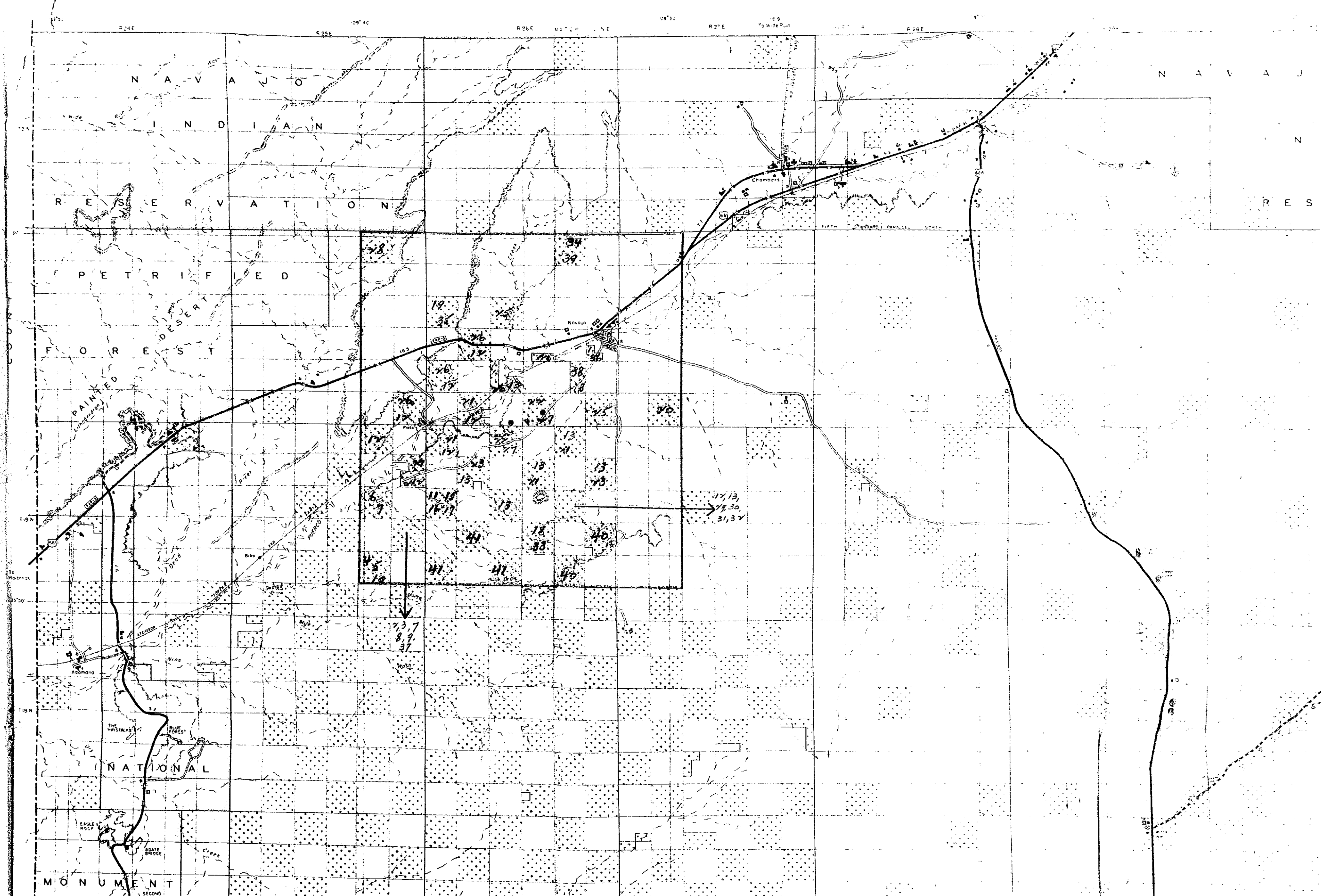
37 - 2377 -- Gene Roxbury

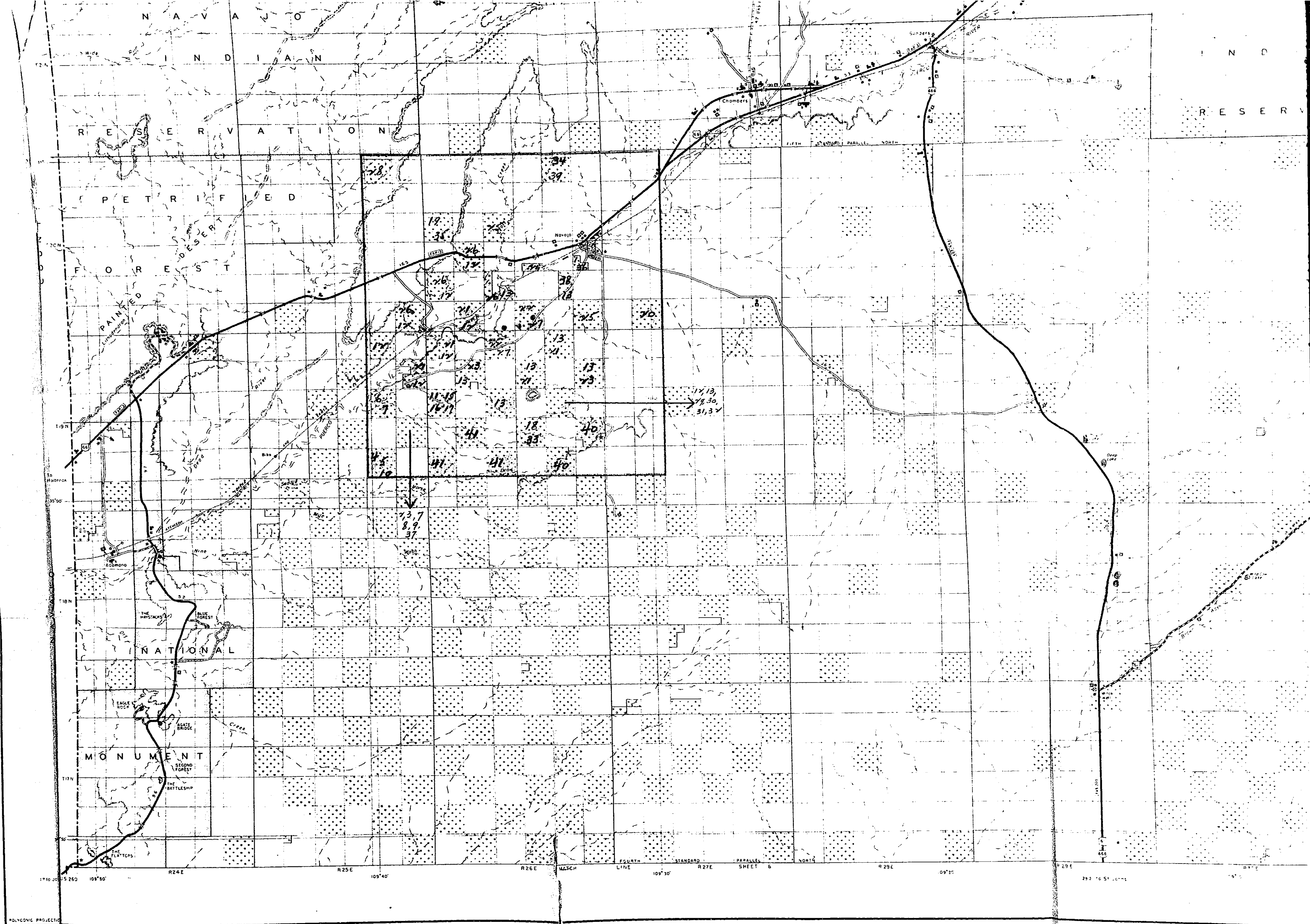
38 - 2398 -- Olive DeWitt

39 - 2437 -- Harry Ruppelius

40 - 2438 -- Harry Ruppelius

41 - 2439 -- Harry Ruppelius

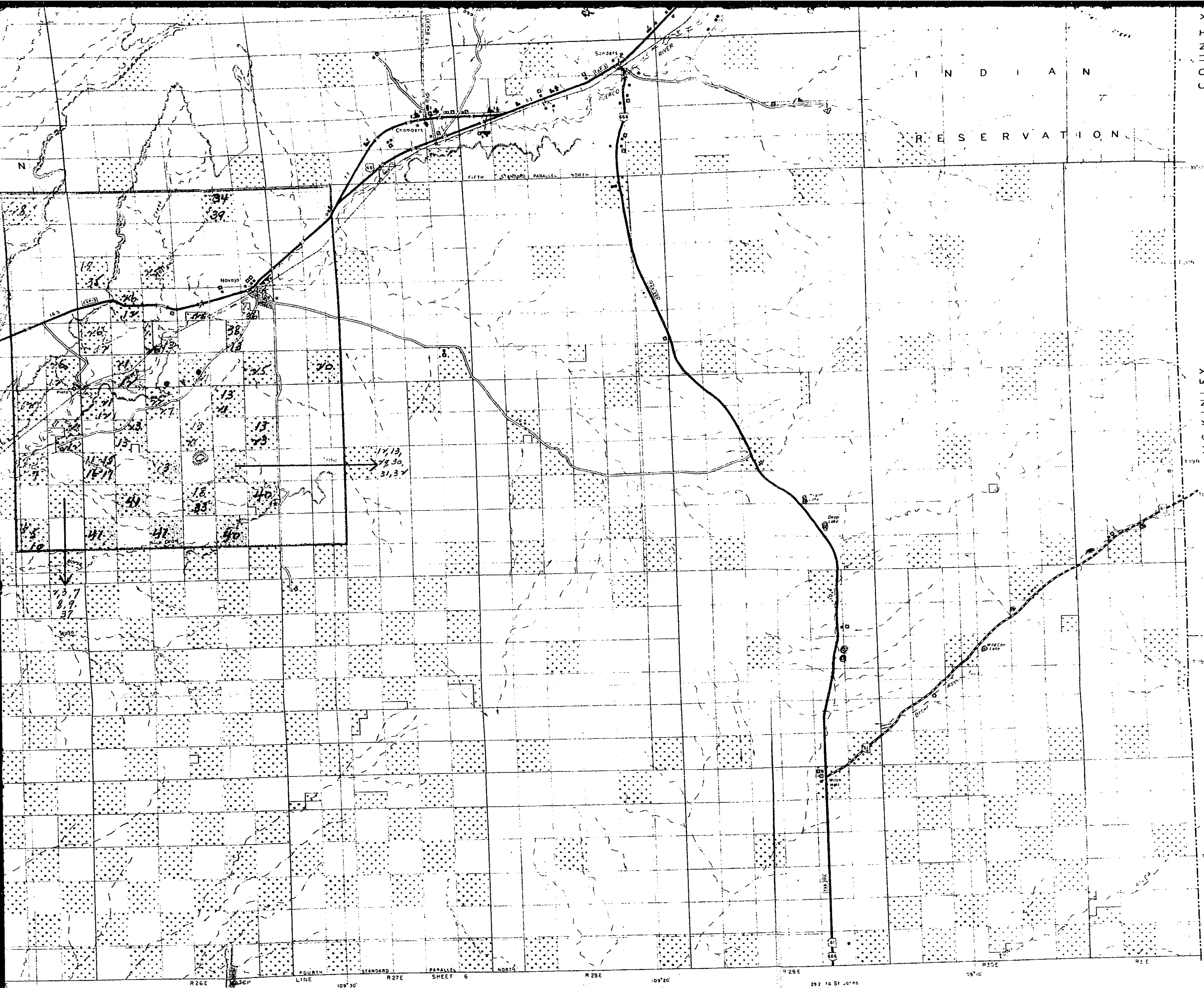




POLYCONIC PROJECTION

FOURTH STANDARD PARALLEL NORTH SHEET 6

292 10 51 10 11



COUNTY

M E X I C O

VALENCIA COUNTY

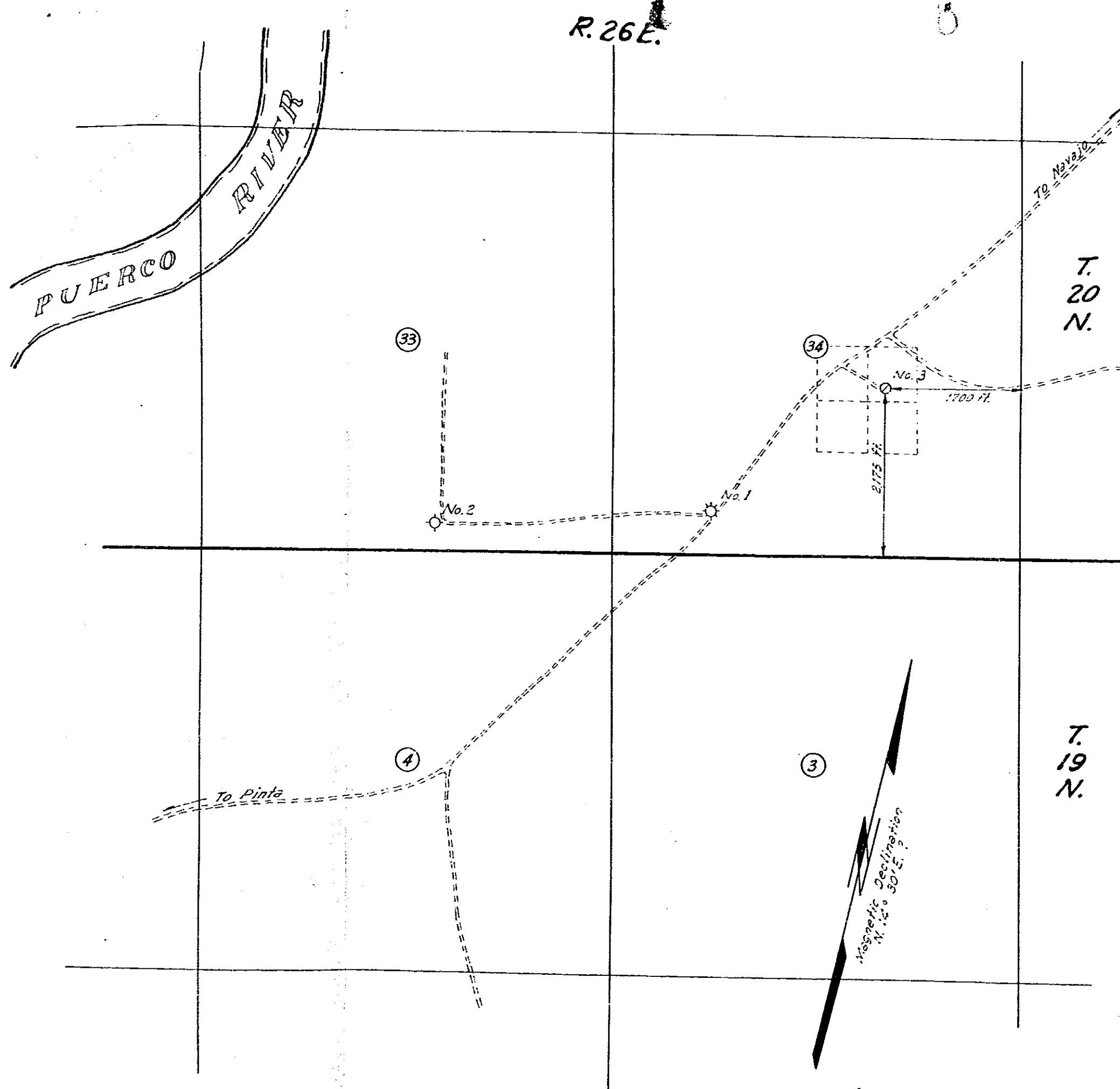


APACHE COUNTY
ARIZONA

SCALE
1952

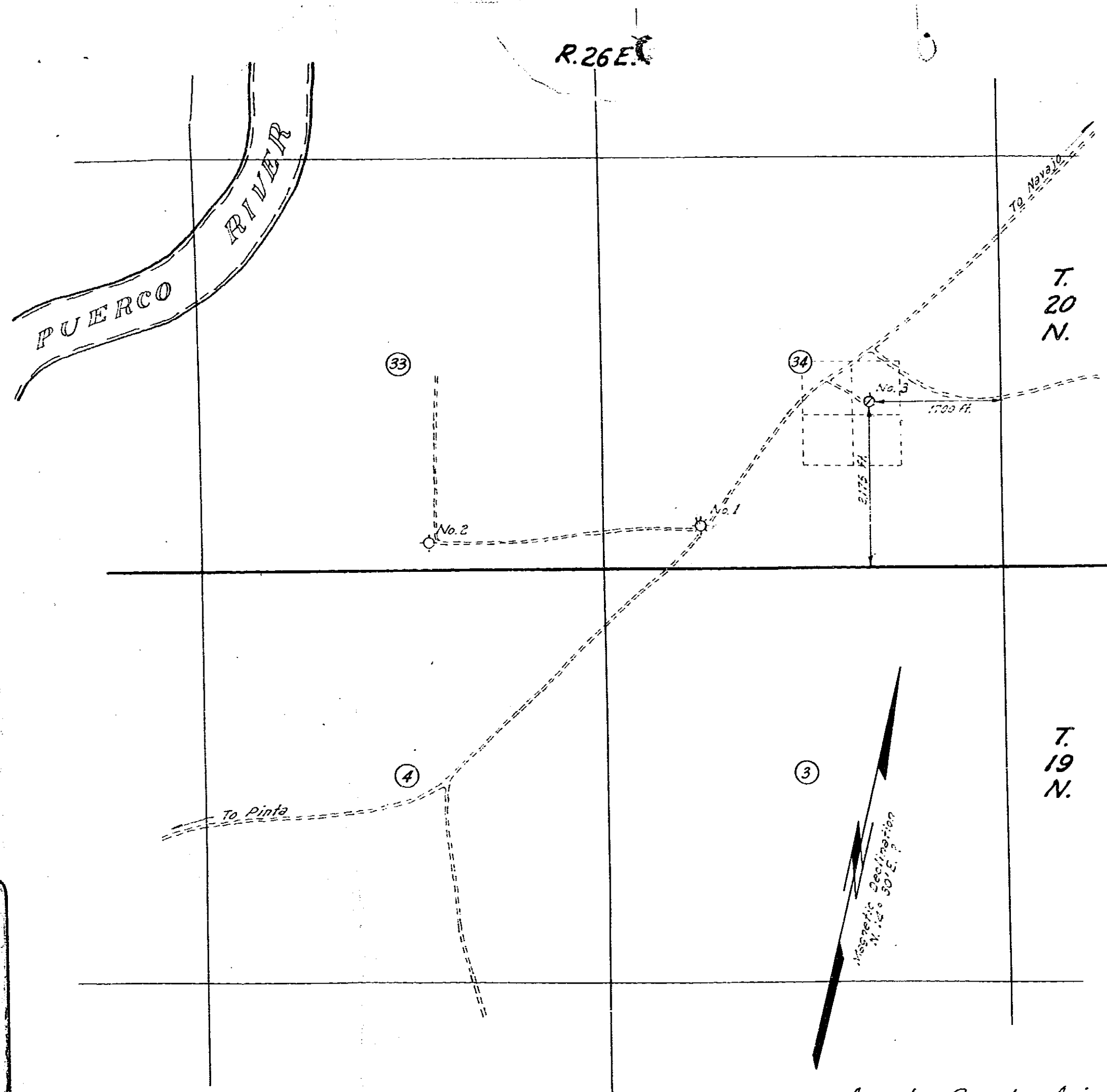
FIELD INVENTORY 1948-49 SHEET 1 OF 11 SHEETS AND SUPPLEMENTAL SHEET

GENERAL HIGHWAY MAP APACHE COUNTY ARIZONA






Apache County, Arizona
Date: Sept. 28, 1956
Scale: 4" = 1 Mile

State #1
1-72

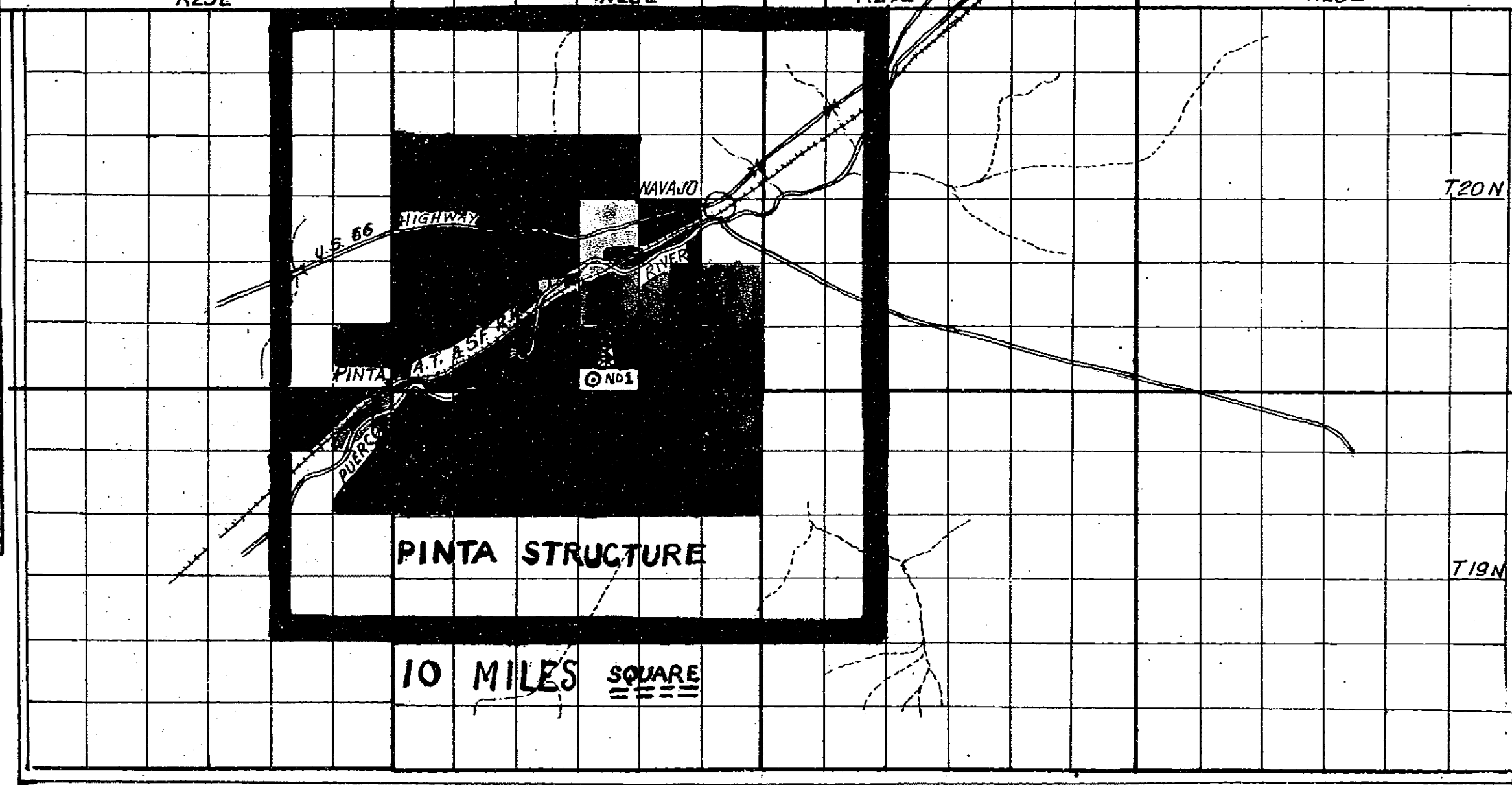



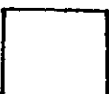
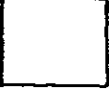



Apache County, Arizona
 Date: Sept. 28, 1956
 Scale: 4" = 1 Mile

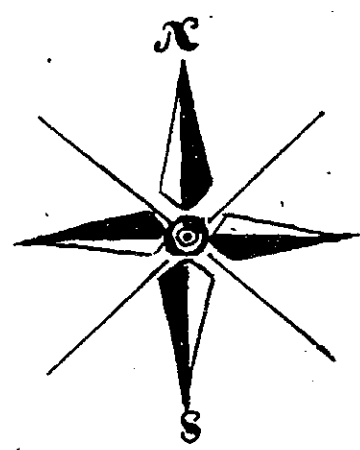
State #1
 1-72

 HORTONSTEIN
 STATE
 FEDERAL

MAP OF LEASE OWNERSHIP



 KIPLING
 KIPLING PETROLEUM
 MARTIN-EZAL
 SPURLOCK AND WETSLER
 GEO. C. CREAGER
 STATE LEASES - 34-20-26 ONLY
 4-19-26
 GENERAL PETROLEUM CORP.



INC. State #1
 1-72

HORTONSTEIN

STATE

FEDERAL

R25E

R26E

R27E

R28E

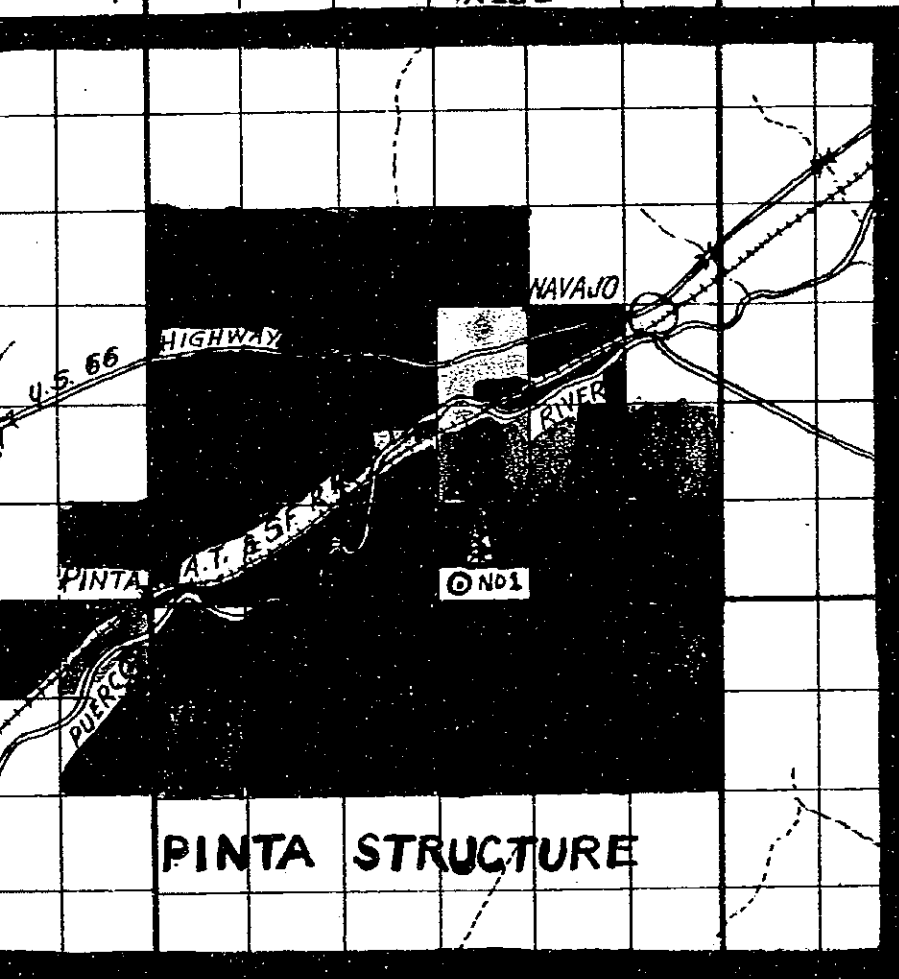
T21N

MAP
OF

LEASE OWNERSHIP

T20N

T19N



PINTA STRUCTURE

10 MILES SQUARE

KIPLING

KIPLING
PETROLEUM

MARTIN-DEAL

SPURLOCK
AND
WETSLER

GEO. C. CREAGER
STATE LEASES - 34-20-26 ONLY
4-19-26

GENERAL
PETROLEUM
CORP.

KIPLING PETROLEUM

-1949-



APACHE OIL & HELIUM CORP.

Well #1 - October 14, 1956

Completed Helium Well.
Flow - 12,500,000 C. F. Per Day open flow.
Helium - 8.50
Nitrogen - 89.08
CO₂ - .91
Argon - .66
Methane - .85

OPERATOR: Kerr-McGee Oil Industries, Inc.
Oklahoma City, Oklahoma
Contract #357
Project #382

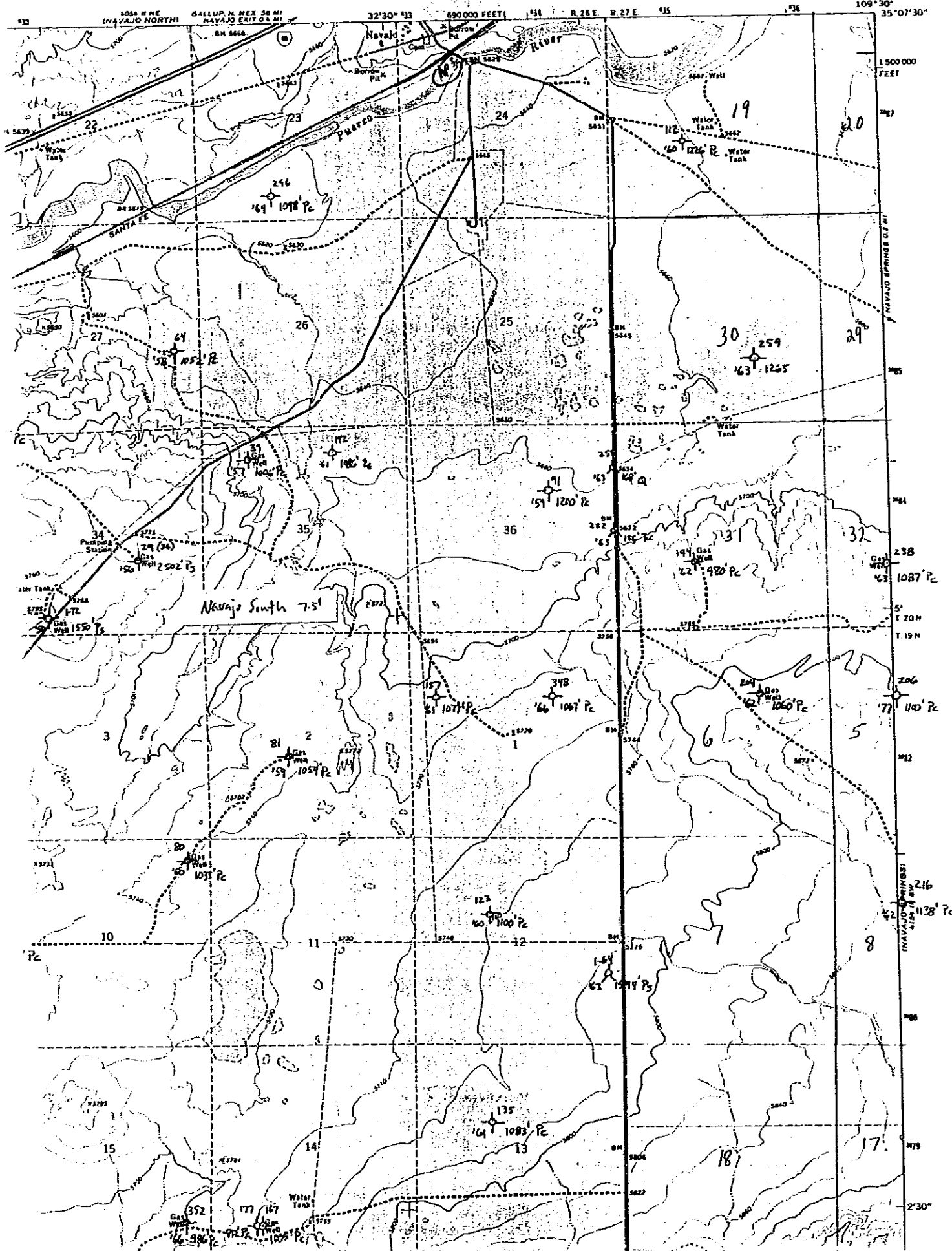
Pinta Structure - Apache County, Navajo, Arizona
Barney Lyon - Otto Barton - Engineer - KERMAC

DRILLER: - Riley Drilling Co. - Rig #22

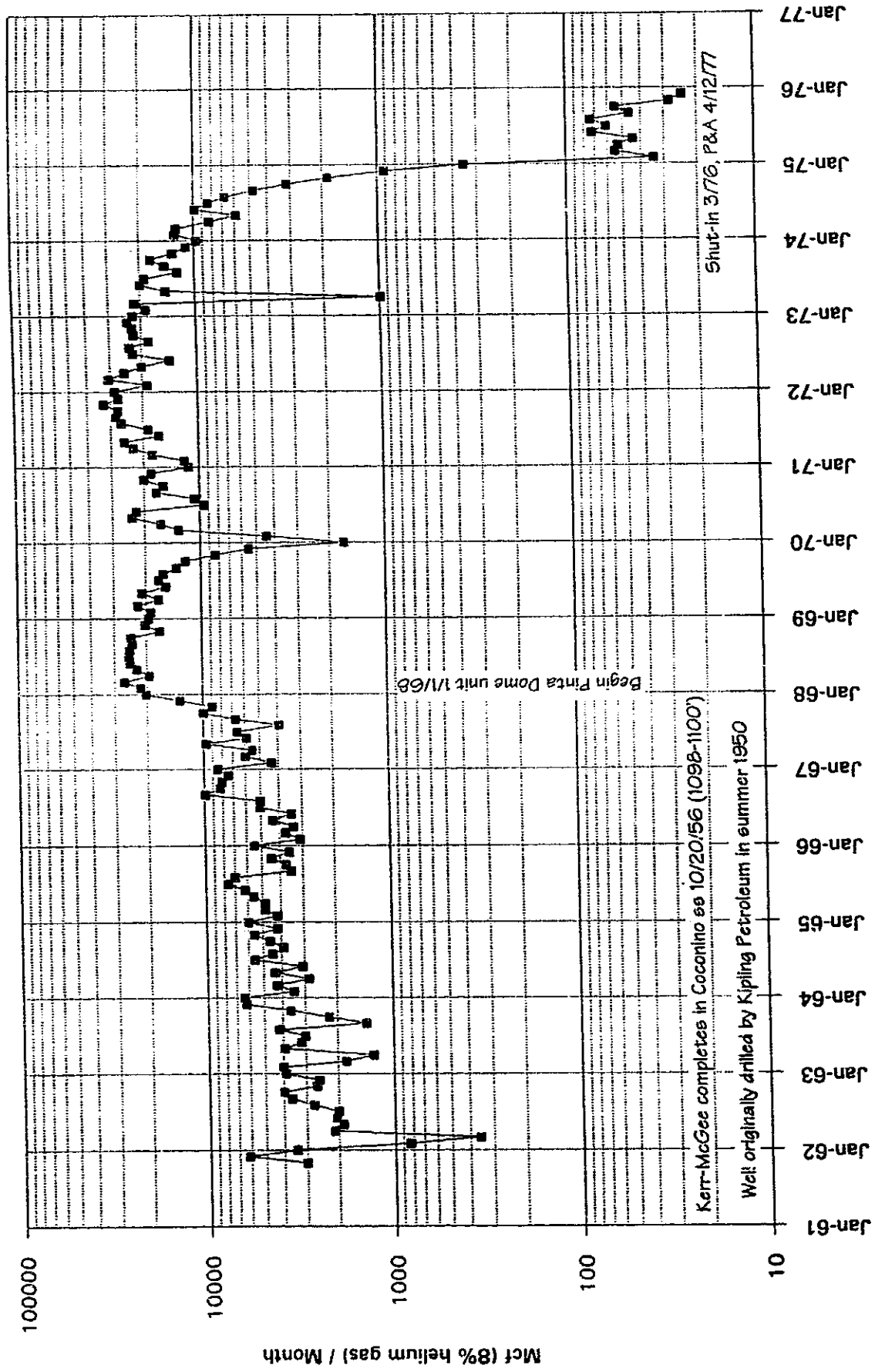
Photo Courtesy - Arizona Republic

Permit #46588
Kerr-McGee State #1

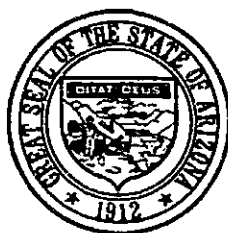
ARIZONA-APACHE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Kerr-McGee 1 Macie-State (1-72)
 SW 34-20N-26E, Pinta Dome, Arizona



1/16/98



Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

June 24, 1994

Mr. Ronald S. Besoyan
433 E. Princeton Avenue
Fresno, California 93704

file 1-72

Dear Mr. Besoyan:

I received your note of June 20 a few days ago. In response to your inquiry about helium being saved and sold in the U.S., I have enclosed the latest chapter on Helium from the U.S. Bureau of Mines Annual Report. This chapter is updated and issued annually in about August of each year.

I gleaned through this article when it first arrived but I did not read it in any detail. It may thus provide information on the Helium Conservation Corporation to which your note referred. Also, I will let you know if Kerr-McGee or another entity goes back into the Pinta Dome area. By the way, Kerr-McGee sold all their interest in the Dineh-bi-Keyah oil field in northeastern Arizona effective last May 1. Their sale of the Dineh-bi-Keyah oil field ended the 38-year presence of Kerr-McGee in Arizona that started with their initiation of activity at the Pinta Dome helium area in 1956.

I hope that you find the enclosed information helpful.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Adminis

Enclosure

559-227-6080

Fhsno CA 93650



Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

June 24, 1994

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Fresno, California 93704

file 1-72

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Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosure



Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

June 16, 1994

Mr. Ronald S. Besoyan
433 E. Princeton Avenue
Fresno, California 93704

file 1-72

Dear Mr. Besoyan:

This will acknowledge receipt of Kerr-McGee's May 4, 1994, letter to you, which you subsequently sent a copy of to me on May 16, 1994. I note from Kerr-McGee's letter that you must have asked about Apache Oil & Helium Corporation. In response to that inquiry, I have enclosed a copy of an article from the April 1963 issue of *Rocky Mountain Oil Reporter* that indicates that Apache Oil & Helium Corporation was bought out by Coast Exploration Company of Los Angeles, probably in early 1963. I note from this article that Erlich, President of Coast Exploration Co., was of the opinion that reserves at Pinta Dome would insure operation of a helium extraction plant for many years. That it did, over 20 years to be exact.

I have also enclosed an article on Pinta Dome from the February 1961 issue of *Rocky Mountain Oil Reporter*. In this article, John A. Masters, chief geologist for Kerr-McGee, estimated 7.5 billion cubic feet of recoverable helium-bearing gas at Pinta. In fact, 9.2 billion cubic feet of helium-bearing gas were eventually recovered before low line pressures feeding the plant from the several wells in the field led to the plant's shut-down in early 1976.

It is not possible for the State of Arizona to test the Macie #2 because this well was plugged on April 13, 1977 (plugging report enclosed). To test it, the State would need to drill out the cement plugs. Unfortunately, the State does not have funds to accomplish that.

I hope that the enclosed information is useful to you.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

New Helium Company

Coast Exploration Co. has launched into the business of helium production by acquiring control of the Apache Oil & Helium Corp. of Arizona, it was announced by Louis Erlich, president of the Los Angeles-based firm.

Coast hitherto has confined its activities to the oil and natural gas properties. The company, also engaged in real estate development in Tempe, Arizona, anticipates "substantial corporate earnings" as a result of the acquisition.

Apache owned most of the helium, oil and gas leases covering Arizona's Pinta Dome and assigned these leases covering approximately 23,000 acres to Kerr-McGee Oil Industries, Inc., subject to an operating agreement in which Apache is entitled to 25 per cent of the net profits derived from Kerr-McGee's operations on these leases, according to Erlich.

Eight helium wells have been completed as producers to date and Kerr-McGee recently constructed the first privately-owned and operated helium extraction plant in the world on the lease block. The plant has an initial capacity of 2½ million cubic feet per day and is currently running at about 50 per cent capacity.

"From data furnished by Kerr-McGee, it appears the Apache leases contain approximately 91 per cent of the known reserves under the entire field," Erlich said, adding that the Pinta Dome gas bears 8½-9 per cent helium, highest percentage helium-bearing gas ever found. "A conservative estimate of these reserves would insure the operation of this plant at capacity for many years," Erlich stated.

Apache had been in receivership for several years due to stockholder differences and extensive resultant litigation. Coast Exploration has settled all known legitimate outstanding obligations of Apache with exception of any which may arise from its relationship with Kerr-McGee.

The receivership is now terminated with final accounting approved by the court. The new officers and directors voted in by the stockholders are Erlich, of Los Angeles, president; Theodore Rehm, Scottsdale, Arizona, business counselor, vice president and secretary, and John P. Frank, Phoenix, Arizona, attorney, assistant secretary. The three are also directors.

Humble Deepens Wildcat

Humble Oil & Refining Co. corrected the depth figure of Colorado's deepest hole from 17,500 to 17,047 feet. The Montrose County test is 1 Urahan Unit (C SE NW 26-48N-17W). Humble has taken the well to 17,489 feet and then tackled a fish job.

The well was drilled by Kerr-McGee to the 17,047-foot level.

Humble plans to take it down to 21,000 feet if necessary to reach Mississippi.

Utah's '62 Oil and Gas Production

(Preliminary figures from the State Oil & Gas Conservation Commission)

County	Field	Company	Oil Barrels	Gas (MCF)	No. Wells Producing
Carbon	Grassy Trail	Chiles Service	1,560		1
	Jack Canyon	Hyland Oil Corp.	2,064		1
			3,724		2
Duchesne		Conoco	17,373		5
	Duchesne	Min. Fuel Sup.	8,701		1
	Undesignated	Shamrock Oil	773		1
			26,847		7
Emery	Grassy Trail	Chiles Service	30,106		3
	Undesignated	Chiles Service	2,610		1
			32,716		4
Grand		Pure Oil Co.	52,489	37,821	2
	Big Flat	Southern Nat. Gas	31,140		1
	Long Canyon	Pan American	28,662	713,001	2
	Salt Wash	United Tec. Ind.	390		0
	Sieber Nose		65		(1 shut in)
	Undesignated	Great Western Dr.	24,674		(1 shut in)
		Raphael Pumpelly	80,806	610,810	4
		Texaco Inc.			1
			138,228	1,381,632	10
San Juan		Shell Oil	28,281	12,801	1
	Alkah	Champion Oil	80,793	50,640	2
	Ardo Creek	Sinclair O. & G.	10,486	12,917	1
		Superior Oil	14,968	23,814	1
			86,247	87,771	4
	Field Totals		12,912	26,106	3
Bluff		Humble Oil	31,083	23,273	3
			43,895	59,379	5
	Field Totals		7,159	3,485	1
Boundary Butte		Western Nat. Gas	5,705	16,817	2
Broken Hills		Humble Oil	20,723	59,617	10
Desert Creek		Shell Oil	129,887	1,853	0
Gothic Mesa		Alco O. & G.	941		10
		Gulf Oil			1
	Field Totals		120,658	61,470	10
Grayson		Lion Oil	2,030	2,125	1
Greaser Arch Unit		Texaco Inc.	6,218,052	9,234,651	152
Aneth Unit		Superior Oil	7,712,211	9,032,393	113
McElmo Creek		Phillips Pet.	5,548,473	8,079,226	167
Rutherford		Continental	2,044,619	3,588,585	69
White Mesa		Grynborg & Assoc.	6,801	14,791	1
Cahone Mesa		Superior Oil	54,496	28,669	1
Not in Unit					
	Totals		21,594,662	30,578,015	485
Hatch		Reynolds	712	1,999	1
Humble			59,638	118,548	5
Imay		Pure Oil	274,315	443,038	5
		Texaco Inc.	753,660	966,780	35
	Field Totals		1,067,633	1,528,860	45
Lisbon Unit		Pure Oil	1,488,288	2,956,069	14
Lisbon Pools		Belco Pet.	17,745	22,849	1
		California Oil	13,301	65,476	1
		Pure Oil	47,062	83,194	3
	Area Totals		78,108	181,519	5
Recapture Creek		Alco Oil & Gas	54,351	50,512	2
		Shell Oil	42,967	109,159	1
	Field Totals		97,318	159,671	4
Tohona		Humble Oil	16,215	9,214	2
		Shell Oil	118,954	56,426	8
			135,269	65,670	10
Undesignated		Alco O. & G.	535		0
		Humble Oil	180,577	82,372	1
		Miamet Pet.	2,501		1
		Southern Nat. Gas	10,183		1
		Tenneco Oil	426		1
		Texaco	9,116	5,548	3
			14,998,598	35,803,837	681
Utah		Equity Oil	393,718		10
	Ashley Valley	Hollandsworth & Travis	126,101		2
		Pan American	164,467		11
		R. Lacy	205,344		3
		R. F. Six	3,452		1
			893,082	740	26
	Field Totals		913	74,578	9
Agency Draw		Sinclair	33,576		4
Brennan Bottom		Gulf Oil	5,819		2
Gusher		Barbon Bros.	23,100		1
Pariette Bench		Pan American			
Red Wash		California Oil	3,774,838	12,333,992	153
		White River	135,736	53,038	5
		Humble Oil	680,036	838,199	22
		Walker Hollow	7,478	19,735	1
		Non-Particip.	265,193	151,442	7
		Gulf Oil	9,151	16,788	1
		Texaco Inc.			
	Field Totals		4,672,832	13,473,144	188

(Continued on Page 14)

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Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

October 21, 1992

Merle Bohlander
1600 Turtle Creek
Pampa, Texas 79065

Dear Mr. Bohlander:

Enclosed is the information you requested on reentering a plugged and abandoned helium hole in Arizona. The process is similar to applying for a new well and the necessary forms are listed below.

- 1) Organization Report, Form 1;
- 2) Performance Bond, Form 2 (or cash alternative);
- 3) Application for Permit to Drill or Reenter, Form 3 (include plat & drilling prognosis);
- 4) Completion Report, Form 4;
- 5) Application to Plug and Abandon, Form 9;
- 6) Plugging Record, Form 10; and
- 7) Sundry Report, Form 25 (BLM forms may be substituted for form 25).

Title 12, Chapter 7 of the *Arizona Administrative Code* (copy enclosed) requires Forms 1, 2 (or cash alternative), 3 (include drilling prognosis), and a \$25 application fee to be submitted to this office and approved before a Permit to Drill, Form 27, is issued.

Form 4 is submitted upon completion of the well as a producer or a dry hole, Form 9 is submitted for approval of the plugging plan before the well is abandoned, Form 10 is submitted to record the final placement of plugs, and Form 25 is used to provide this office with updates of activity at the well.

Cash alternatives for surety include certificates of deposit, which must be automatically renewable, drawn on a federally insured bank doing business in Arizona, and sent to this office with the enclosed assignment form properly filled out. Irrevocable letters of credit are not accepted as surety.

I have also enclosed a list of helium wells and their cumulative production. The initial reservoir pressure at the Pinta Dome Field was about 100 psi. It had dropped to about 60 psi when the field was abandoned in 1976. The plugging record for the Kerr-McGee 1 Macie-State (1-72) is enclosed. Do not hesitate to call if you want information on the plugging record of a particular well.

Sincerely,

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures



Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

July 21, 1992

file 1-72

Ronald S. Besoyan
433 East Princeton Avenue
Fresno, California 93704

Dear Mr. Besoyan:

In reply to your letter of July 17, 1992, Kerr McGee abandoned the Pinta Dome helium field simply because production had depleted the gas resource through time.

In 1961 the surface shut-in pressure on the Kerr-McGee #1 Macie-State was about 100 pounds per square inch (psi). By 1969 the surface shut-in pressure on this well had declined to about 60 psi. The pressure decline was essentially field wide and, according to Kerr-McGee, the rate of flow and line pressures to their helium extraction plant at Navajo, Arizona, was very seldom steady for over a few hours at a time. Our records further indicate that when the plant was in full operation in the early 1970's, line pressures and well operating pressures were never more than 1 to 5 pounds less than well shut-in pressures. As a result, Kerr-McGee shut down its helium extraction plant at Navajo on February 25, 1976, because production in the Pinta Dome field had, by that time, declined to such an extent that it was no longer economical to operate the plant.

I appreciate the information you provided on the C.M.S. Kipling Macie #1 well. Our records show that the initial potential on this well was 10.8 million cubic feet of raw gas per day, a rate that would have surely roared like a jet engine at the wellhead. At 8 percent helium that would have been about 864 thousand cubic feet of pure helium per day. As you can see from the enclosed list of helium wells, the Kerr-McGee #1 Macie-State was the second biggest helium producer in Arizona's history.

Sincerely,

Steve

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosure

HELIUM WELLS IN ARIZONA SORTED BY CUMULATIVE GAS PRODUCTION

July 21, 1992 at 8:22 a.m.

Page 1

PERMI	TWP	RGE	SE	OPERATOR	LEASE NO	ST	FLD	CUMGAS M
194	20N	27E	31	Eastern Petroleum	13 Santa Fe	HP	NS	1783968
1-72	20N	26E	34	Kerr-McGee	01 Macie-State	HP	PD	1779460
36	20N	26E	34	Kerr-McGee	02 State	HP	PD	1442149
81	19N	26E	02	Kerr-McGee(Eastern	1-02 State	HP	PD	1100253
88	20N	26E	28	Kerr-McGee(Eastern	1-28 State	HP	PD	804961
10	20N	26E	33	Kerr-McGee	01 Fee	HP	PD	531292
39	20N	26E	35	Kerr-McGee	02 Fee	HP	PD	513646
113	41N	30E	36	Texaco	1 Navajo-Z	HP	TNP	385774
238	20N	27E	32	Eastern(KerrMcGee)	1 Barfoot-State	HP	NS	276907
349	19N	26E	04	Kerr-McGee	03A State	HP	PD	266127
236	19N	27E	04	Eastern Petroleum	17 Santa Fe	HP	NS	86878
38	20N	26E	32	Kerr-McGee	04 State	HP	PD	48233
206	19N	27E	05	Eastern Petroleum	14 Santa Fe	HP	NS	47141
80	19N	26E	10	Eastern Petroleum	01-10 State	HP	PD	43387
471	20N	27E	25	Crest-Ariz Helium	01 Santa Fe	HP	ENS	42073
263	20N	27E	27	Eastern Petroleum	35 Santa Fe	HP	NS	25388
553	20N	27E	36	W. Heli. Connelly	1 KM-State	HP	ENS	23337
234	20N	28E	31	Apache Drlg, E.Pet	21 Ancon-SntaFe	HP	ENS	22007
537	20N	28E	31	Eastern Petroleum	21-1A Santa Fe	HP	ENS	8299
37	19N	26E	04	Kerr-McGee	03 State	HP	PD	6186
592	20N	28E	30	Eastern Petroleum	01 Merde-Indian	HP	ENS	991
378	20N	26E	32	Kerr-McGee	04A State	HP	PD	282
473	20N	27E	25	Crest-Ariz Helium	08X Santa Fe	HN	ENS	0
422	36N	30E	33	Kerr-McGee	02 Navajo-C	HS	DBK	0
385	35N	30E	05	Kerr-McGee	02 Navajo-B	HS	DBK	0
258	20N	27E	28	Eastern Petroleum	32 Santa Fe	HN	NS	0
348	19N	26E	01	Eastern Petroleum	02 Reese	HN	NS	0
255	20N	27E	29	Eastern Petroleum	31 Santa Fe	HN	NS	0
29	20N	26E	34	Apache	03 Macie	HP	PD	0
204	19N	27E	06	Eastern (Crest)	07 Santa Fe	HN	NS	0
110	20N	27E	33	Crest Oil	02 Santa Fe	HN	NS	0

TOTALS: CUMGAS IN MCF 9,238,739

FLD: DBK = Dineh-Bi-Keyah Field
 ENS = East Navajo Springs Field
 NS = Navajo Springs Field
 PD = Pinta Dome Field
 TNP = Teec Nos Pos Field



Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

July 15, 1992

Ronald S. Besoyan
433 East Princeton Avenue
Fresno, California 93704

file 1-72

Dear Mr. Besoyan:

In reply to your letter of June 22, 1992, regarding the Pinta Dome helium field, I will attempt to answer your questions in turn. Mr. John Bannister retired from the Oil and Gas Conservation Commission in February 1972.

There has not been any production at the Pinta Dome helium field since 1975. All of the wells in the Pinta Dome, Navajo Springs, and East Navajo Springs fields were plugged and abandoned in 1976 and 1977. Therefore, the current wellhead price for helium gas at Pinta Dome field is zero.

With respect to the lawsuit, I have no knowledge of the case to which you refer. This information could probably be obtained by writing to the clerk of the Superior Court of Maricopa County and providing them with the litigants in the case and the approximate date of the case. Their phone number is 602-261-3342.

As you requested, I have enclosed a copy our most recent production report. Annual subscriptions to this report are \$16.00. An oil and gas publications list is enclosed and this report is OG-1, which I have highlighted with a yellow marker.

As far as I know, Kerr-McGee did not sell out to Union Carbide. Kerr-McGee still operates the Dineh-Bi-Keyah oil field in northeastern Arizona. Their address is P.O. Box 250, Amarillo, Texas 79189.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures



Fife Symington
Governor

State of Arizona
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

July 15, 1992

Ronald S. Besoyan
433 East Princeton Avenue
Fresno, California 93704

file 1-77

Dear Mr. Besoyan:

In reply to your letter of June 22, 1992, regarding the Pinta Dome helium field, I will attempt to answer your questions in turn. Mr. John Bannister retired from the Oil and Gas Conservation Commission in February 1972.

There has not been any production at the Pinta Dome helium field since 1975. All of the wells in the Pinta Dome, Navajo Springs, and East Navajo Springs fields were plugged and abandoned in 1976 and 1977. Therefore, the current wellhead price for helium gas at Pinta Dome field is zero.

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As far as I know, Kerr-McGee did not sell out to Union Carbide. Kerr-McGee still operates the Dineh-Bi-Keyah oil field in northeastern Arizona. Their address is P.O. Box 250, Amarillo, Texas 79189.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

ARIZONA AND HELIUM
by
D. A. JEROME

The passage by Congress of the Helium Conservation Bill (HR-10548) and its signing by President Eisenhower provides the incentive for the building, extracting and marketing of helium by private industry. Among other things, this law permits the Department of Interior to negotiate contracts with oil and gas companies and others to build plants to strip helium from natural gas and further provides private industry a market for the sale of helium both to the Government and private industry. Prior to the passage of this bill, private industry could not economically justify an investment in a helium plant as the Government's virtual monopoly would have precluded taking such risks. This paves the way for development of a helium extraction plant at the Pinta Dome field in Apache County, one of the richest concentrations of the noncombustible gas in the Free World. The plant is expected to cost in excess of \$8,000,000.

HISTORY

The first recorded report of helium-bearing gas in Arizona was from the Great Basin Oil Company's Taylor-Fuller well drilled south of Holbrook in 1927. The amount of helium was reported to be slightly greater than 1%.

In 1950, Kipling Petroleum Co. drilled the Macie #1 (Kerr-McGee #1 State) on the Pinta structure just southwest of the community of Navajo. The test encountered helium-bearing, non-inflammable gas in the lower Chinle conglomerate and a large flow in the upper part of the Coconino sandstone at a depth of 1032 to 1054 feet. Analyses were made by the Bureau of Mines on all of the Kerr-McGee wells on Pinta with the following minimum and maximum percentages:

Helium	- 6.98	- 9.08%
Nitrogen	- 89.78	- 90.76%
Methane	- Trace	- 0.96%
Oxygen	- Trace	- 0.29%
Argon	- 0.60	- 0.66%
Hydrogen	- Trace	- 0.03%
Carbon Dioxide	0.26	- 1.10%

The Kipling well is reported to have tested 24,000,000 cubic feet of gas per day after blowing to the air for four to five weeks. The Kipling Well and subsequent Macie #2 (Colgrove #1 Hortenstein) well were later acquired by Kerr-McGee Oil Industries who then drilled four more shut-in producers.



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA

8686 NORTH CENTRAL, SUITE 106
PHOENIX, ARIZONA 85020
PHONE: (602) 271-5161

March 7, 1977

Mr. C. J. Breeden
Kerr-McGee Corporation
P.O. Box 250
Amarillo, Texas 79105

Re: Form 9, Application to Abandon and Plug

Dear Mr. Breeden:

Attached are your approved copies of Form 9, Application to Abandon and Plug ten wells in the Pinta Dome Field, Apache County, Arizona.

Please advise me what date you plan to commence plugging operations.

Very truly yours,

A handwritten signature in cursive script, appearing to read "W. E. Allen".

William E. Allen
Director
Enforcement Section

WEA/vb
Enc.

NONE



KERR-McGEE CORPORATION

626 AMARILLO PETROLEUM BUILDING

P. O. BOX 250 • AMARILLO, TEXAS 79105

PHONE

806 376-7256

February 28, 1977

Arizona Oil and Gas Conservation Commission
8686 North Central Avenue, Suite 106
Phoenix, Arizona 85020

RECEIVED

MAR 3 1977

O & G CONS. COMM.

RE: Form 9
Application to Abandon
and Plug

- Gentlemen:

Attached are two copies each of Form 9, Application to Abandon and Plug, for 10 wells in the Pinta Dome Field, Apache County, Arizona. Plugging will commence when your approval is obtained and with availability of equipment to perform this work. If there are any questions, please advise.

Sincerely,

KERR-McGEE CORPORATION

C. J. Breeden
C. J. Breeden
District Manager
Southwest District - North America

CJB/srm

Attachments

NONE

Page 2
Activity Report
Enforcement Section

1-7

Kerr-McGee Corporation has shut down its helium extraction plant in Navajo, Arizona. This plant was shut down

February 25, 1976. Production in the Pinta Dome field had declined to such an extent that it was no longer economical to operate this plant. Kerr-McGee now plans to plug their wells in the Pinta Dome Unit and abandon all operations.

Several months ago, Kerr-McGee made some effort to take over operations of the Navajo Springs Unit. It is doubtful that if they had been successful in this venture, the Navajo Springs Unit would have supplied enough additional gas to prolong the closing of the plant for any great period of time.



KERR-MCGEE CORPORATION

626 AMARILLO PETROLEUM BUILDING

P. O. BOX 250 • AMARILLO, TEXAS 79105

March 3, 1970

PHONE

806 376-7256

Arizona Oil & Gas Conservation Commission
Room 202
1624 West Adams
Phoenix, Arizona 85007

Attn: Mr. John Bannister

RE: Sundry Notices
Fee #2
State #1
State #2
Pinta Dome Field

Dear John:

Enclosed please find two copies of Sundry Notices for completed work on the above wells in the Pinta Dome Field.

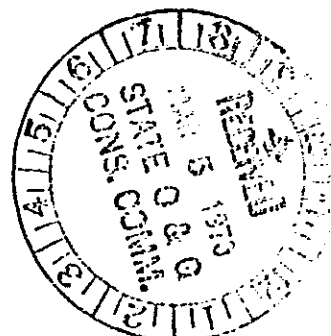
Sincerely yours,

Kerr-McGee Corporation

Otto C. Barton
Production Superintendent
Southwestern District

OCB/mh

Enclosures





February 10, 1970

PHONE
806 376-7256

Arizona Oil & Gas Conservation Commission
Room 202
1624 West Adams
Phoenix, Arizona 85007

Attn: Mr. John Bannister

Re: Sundry Notices
Fee #2
State #1
State #2
Pinta Dome Field

Dear John:

As discussed over the telephone, enclosed please find two copies of Sundry Notices for proposed work on the above wells in the Pinta Dome Field.

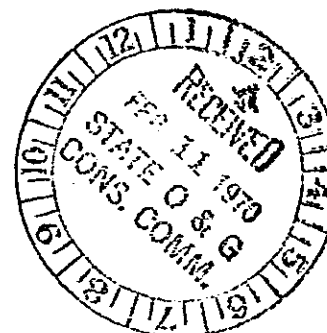
It would be appreciated if you would approve the enclosed forms and return one copy for our file.

Sincerely yours,

KERR-McGEE CORPORATION

O. C. Barton
Production Supt.

OCB/ss
Encl.



X. Chrono
Lambert

X { 10
39
36
X- 340

X { 378
80
88
81

KERR-McGEE State #1
(No Permit)

June 12, 1969

Mr. Otto C. Barton
Kerr-McGee Corporation
P. O. Box K
Sunray, Texas 79086

Re: Pinta Dome Unit Wells

Dear Mr. Barton:

This letter constitutes permission from this Commission to suspend the annual testing for the captioned wells as provided by Rule 401 during June, 1969.

Sincerely,

John Bannister
Executive Secretary

JAL:jf

~~2/19~~ KERR-McGEE State #1
No Permit

KERR-McGEE
POST OFFICE BOX "K" • SUNDAY, TEXAS 79086

June 9, 1969

Oil and Gas Conservation Commission
State of Arizona
Room 202 - 1624 West Adams
Phoenix, Arizona 85007

Attention: Mr. James A. Lambert

Dear Sir:

In accordance with my telephone conversation with you and Mr. John Bannister today, we are hereby requesting the commissions approval to defer the annual testing requirements set forth in Rule 401 on all helium gas wells in the Pinta Dome Unit, Apache County, Arizona.

This field is a unit operation. Only six wells, Eastern State #1-2 and #1-28, Kerr-McGee State #1, #2, #3A, and Fee #1 have been produced, the other three wells, Eastern State 1-10, Kerr-McGee State #4A and Kerr-McGee Fee #2 have been shut-in since unit was formed on January 1, 1968.

Shut in pressures in this field are very low with none exceeding 60 p.s.i.g. Plant operation makes gas flow very erratic, rate of flow and line pressures are very seldom steady for over a few hours at one time. Also when plant is in full operation, line pressures and well operating pressures are never more than 1 to 5# less than well shut in pressures. These conditions make testing procedures as outlined in the testing manual impossible. The only way potential tests could be accomplished would be by venting gas to air which would constitute a waste of valuable natural resources.

We believe that a representative test of the wells in this field is almost impossible and that no useful purpose can be accomplished by flow tests of wells in this unit operation. Therefore we are making this request that annual tests on all wells in Pinta Dome unit be again deferred.

Yours very truly,

KERR-McGEE CORPORATION

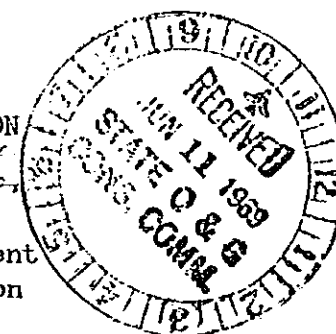
Otto C. Barton
Otto C. Barton
Division Superintendent
Oil and Gas Production

OCE/ds

KERR MC-GEE State #1

No Permit #

X [1
3
X- 349
378
X
Kerr-McGee State #1
Pinta Dome Unit





OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

X- Lambert
X- Chrono

May 22, 1969

Mr. Otto C. Barton
Kerr-McGee Corporation
P. O. Box K
Sunray, Texas 79086

Re: Kerr-McGee Fee #1
Kerr-McGee Fee #2
Kerr-McGee State #1 (Sec. 34 of 20826)
Kerr-McGee State #2
Kerr-McGee State #3A
Kerr-McGee State #4A
Eastern State #1-10
Eastern State #1-28
Eastern State #1-2

Permit #10 } x
Permit #39 }
No Permit
Permit #36 }
Permit #349 } x
Permit #378 }
Permit #80 }
Permit #88 }
Permit #81 }

Dear Mr. Barton:

In accordance with Rule 401 the Oil and Gas Conservation Commission, State of Arizona, has adopted procedures for the annual testing for all gas and/or helium wells.

The Commission's procedure is based upon and must be used in conjunction with the Manual of Back-pressure Testing of Gas Wells as issued by Interstate Oil Compact Commission, P. O. Box 53127, Oklahoma City, Oklahoma 73105.

The Commission has prepared, in addition, a supplement to the IOCC manual inasmuch as that manual is based upon a pressure base other than the 15.025 required by the State of Arizona. The supplement to the IOCC manual has made all necessary corrections to the IOCC manual to reflect the 15.025 pressure base.

No permit #

Page 2
Mr. Barton
May 22, 1969

The tests as required by Rule 401 shall be conducted during the month of June each year and reported in duplicate by July 10th of each year. Forms 18 and 20 will be used for this purpose.

Yours truly,

James A. Lambert
Administrative Assistant

JB:jf

Enc.



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

June 6, 1968

Kerr-McGee Corporation
P.O. Box K
Sunray, Texas 79086

Attention: Mr. Otto C. Barton

Re: Kerr-McGee #1 State
SW SW 34-20N-26E, Apache County, Permit

Kerr-McGee #2 State
NW SE 34-20N-26E, Apache County, Permit 36

Eastern Petroleum #1-2 State
NE SW 2-19N-26E, Apache County, Permit 81

Eastern Petroleum #1-28 State
SE SE 28-20N-26E, Apache County, Permit 88

Kerr-McGee #1 Fee
SW SE 33-20N-26E, Apache County, Permit 10

Eastern Petroleum #1-10 State
NE NE 10-19N-26E, Apache County, Permit 80

Kerr-McGee #2 Fee
NW NW 35-20N-26E, Apache County, Permit 39

Kerr-McGee #3A State
NE NE 4-19N-26E, Apache County, Permit 349

Kerr-McGee #4A State
SW NE 32-20N-26E, Apache County, Permit 378

Gentlemen:

In reply to your letter of May 22, 1968, this letter constitutes permission from this Commission to suspend until further notice the annual capacity testing of captioned helium gas wells comprising the Pinta Dome Coconino Sand Gas Pool Unit.

Very truly yours,

John Bannister
Executive Secretary



May 22, 1968

Oil & Gas Conservation Commission
of the State of Arizona
Room 202, 1624 West Adams Street
Phoenix, Arizona 85007

Attention: Mr. John Bannister
Executive Secretary

Gentlemen:

We are hereby requesting the Commissions approval to defer the annual testing requirements set forth in the rule 401 on all Helium Gas Wells in the Pinta Dome Unit, Apache County, Arizona.

This field is a unit operation and only those wells needed to supply the plants demand are produced. At present only four wells, Eastern State #1-28, Eastern State #1-2, KM State #1 and KM State #2 are being produced. The other five wells in the unit, Eastern State #1-10, KM State #3A and 4A and KM Fee #1 and #2 have been shut in since the unit was formed on January 1, 1968.

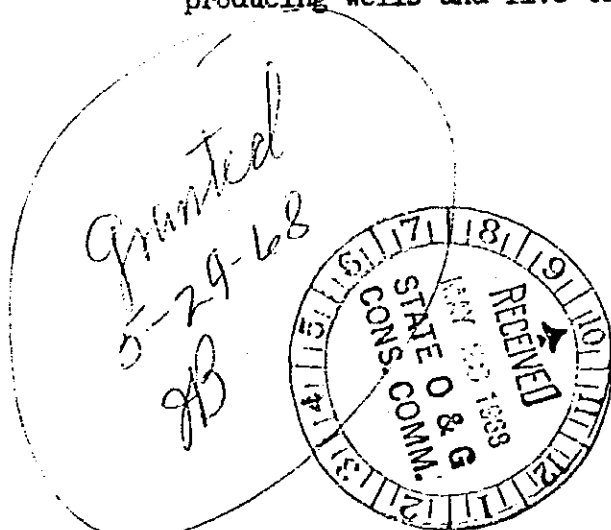
As our sales and production rates vary greatly over short periods of time and well pressures are very low, it is almost impossible to follow testing procedures as outlined in the testing manual except by venting gas to the air while testing.

The venting of gas to air constitutes a waste of valuable natural resources. We feel that no useful purpose can be served by annual potential tests of wells in a unit operation of this kind. Therefore we are making this request that annual tests be deferred on all wells in the Pinta Dome Unit. This includes both the four producing wells and five temporarily shut in wells listed above.

Yours very truly,
Kerr-McGee Corporation

Otto C. Barton

Otto C. Barton
Division Superintendent of Oil & Gas Prod.
Box K-Sunray, Texas-79086



120.00 *
 160.00
 2,217.16
 959.83
 920.00
 360.00
 1,280.00
 1,617.86
 2,240.00
 320.19
 10,195.04 *

120.00
 160.00
 2,217.16
 959.83
 920.00
 360.00
 1,280.00
 1,617.86
 2,240.00
 320.19
 10,195.04

Kerr M-Jee Leases

1/6588

2088	- 120.00
2089	160.00
2173	2217.76
2114	959.83
2115	920.00
2116	360.00
2117	1280.00
2118	1617.86
2119	2240.00
2120	320.19

10,195.04

Kerr M-Jee Leases

1/6588

August 21, 1957

Mr. Otto C. Barton
Kerr-McGee Oil Industries, Inc.,
Box 337
Sunray, Texas

Dear Mr. Barton:

We wish to thank you for your prompt attention in the matter of supplying us with the data requested with regard to your drilling operations. This chart will be of value to us in checking for any discrepancies we may have in our files.

We are returning to you the extra copies of our O&G form 52 as per your request. Thank you for your cooperation.

Very truly yours,

STATE LAND DEPARTMENT

Louis C. Duncan,
Manager

mb
Encls.

46588

KERR-MCGEE OIL INDUSTRIES, INC.

KERR-McGEE BUILDING
OKLAHOMA CITY 2, OKLAHOMA

Sunray, Texas
July 22, 1957

State Land Department
State of Arizona
Phoenix, Arizona

Attention: Mr. Duncan

Dear Sir:

Please find attached 4 copies each of the O&G 52 Well Completion Report covering the following wells: Fee #2 located in Section 35-20N-26E, Apache County, Arizona, State #3 located in Section 4-19N-26E, Apache County, Arizona, State #4 located in Section 32-20N-26E, Apache County, Arizona.

When these forms have been approved, please return the surplus copies to this office for distribution.

Yours very truly,

Otto C. Barton

Otto C. Barton

OCB-m

46588

April 1, 1957

Mr. Otto C. Barton
Kerr-McGee Oil Industries, Inc.,
P. O. Box 337
Sunray, Texas

Dear Mr. Barton:

Thank you for our form 51, Notice of Intention to Drill New Well, which covers the drilling operations of three wells, together with your draft in the amount of \$75.00 for filing fees, receipt for same is enclosed.

In reference to the above mentioned forms, we wish to call your attention to the necessary changes we feel should be made where the number of the well is concerned. Since there have been two wells drilled on State land, and one well on Federal land, which were taken over by your Company, and in order to establish the number of wells in a consecutive manner, we have made the necessary changes as follows:

Former Wells

State #1:	Sec. 34, 20 N., 26 E.
State #2:	Sec. 34, 20 N., 26 E.
Fee #1:	Sec. 33, 20 N., 26 E.

New Wells

State #3:	(Your State #1)	Sec. 4, 19 N., 26 E.
State #4:	(Your State #2)	Sec. 32, 20 N., 26 E.
Fee #2:	(Your Macie #4)	Sec. 35, 20 N., 26 E.

We trust the above changes on the new wells will not inconvenience you too much and if we may be of further assistance, please let us know. We are inclosing duplicate copies of these forms for your files which have been approved by the State Land Commissioner, April 1, 1957. We are directing these to you at Navajo, Arizona as requested.

Very truly yours,

STATE LAND DEPARTMENT

Louis C. Duncan,
Manager

Encls.

46588

March 27, 1957

Mr. Phillip W. Johnson
P. O. Box 2270
Tucson, Arizona

Dear Phil:

Enclosed please find form 51, together with plans for three new wells to be drilled by Kerr-McGee Oil Industries for your concurrence. The two wells called State #1 and State #2 are on State land, while the Macie #1 is Fee land.

Please return to me as soon as possible. Best regards.

Sincerely,

M. R. Bates,

mb
Encl. (3)

46588

KERR-MCGEE OIL INDUSTRIES, INC.

KERR-MCGEE BUILDING

OKLAHOMA CITY 2, OKLAHOMA

Box 337

Sunray, Texas
26 March 1957

State Land Department
Attention: Mr. Duncan
Phoenix, Arizona

Dear Sir:

Enclosed are 6 copies of form number OG-51 for the following wells.
State #1, center Northeast, Northwest, Southeast, Section 4, 19N, 26E,
Apache County, Arizona. State #2, center of Northwest $\frac{1}{4}$, Southwest $\frac{1}{4}$, North-
east $\frac{1}{4}$ of Section 32, 20N, 26E, Apache County, Arizona. Macie #4, center
of North $\frac{1}{2}$ of Northwest $\frac{1}{4}$ of Section 35, 20N, 26E, Apache County, Arizona.

Enclosed is a draft for \$75.00 covering the filing fees. Please
insert one copy of each of the above forms in this draft.

When these forms have been approved, please return the surplus
copies to me at Navajo, Arizona, for distribution.

Yours truly,

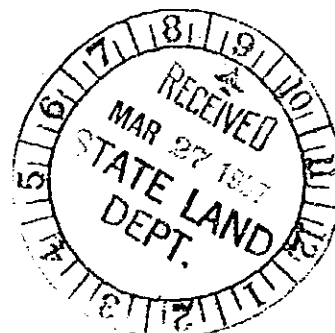
Otto C. Barton

Otto C. Barton
Kerr-McGee Oil Ind., Inc.
Navajo, Arizona

OCB-m

cc: B.G. Taylor

KERR-MCGEE



16588

KERR-McGEE OIL INDUSTRIES, INC.

KERR-McGEE BUILDING
OKLAHOMA CITY 2, OKLAHOMA

Sunray, Texas
15 November 1956

Attn. Mr. Duncan
State Land Department
Phoenix, Arizona

Dear Sir:

Kerr-McGee Macie #1 - located SE-SW-SW-- Sec. 34-20N-26E, Apache County, Arizona. This well formerly the Apache Oil and Helium Company Macie #1 was drilled in 1950. We took over operation in September 1956 and found the well in the following condition. T.D. 1550', elevation at ground level 5780'. 12" casing set at 15' with 7 sacks cement, 10" casing mudded in at 640', 8 5/8" casing set at 840' cemented with 25 sacks, 6 5/8" set at 1530' not cemented.

Well was making approximately 20 MCF gas with S.I.P. of 113# from annulus between 8 5/8" and 10" casing and approximately 2700 MCF with S.I.P. 89.9# from annulus between 8 5/8" and 6 5/8" casing. No gas was coming thru 6 5/8" casing.

On September 15, 1956, we ran Lane Wells Gamma Ray and Neutron log to 1538'. Killed well with mud and attempted to pull 6 5/8" casing. Could not pull casing set Baker Bridge Plug at 1200' and perforated 6 5/8" casing with 8 holes from 1098' to 1100'. Well immediately went on vacuum, then began unloading through 6 5/8" casing. Well was cleaned up and shut in October 20, 1956.

Yours truly,

Otto C. Barton

Otto C. Barton

OCB-m

cc: B.G. Taylor

KERRMAC

46588



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
P. O. BOX 911
AMARILLO, TEXAS

July 30, 1954

File in Perm. M. G. 50-34-204-26E
#1 State
Mr. Arthur A. Birakrant
Arizona Gas and Chemical Corporation
Heard Building
Phoenix, Arizona

Dear Mr. Birakrant:

Transmitted herewith is the data and results of an open-flow test on the Macie No. 1 well, tested on July 24, 1954. The test reveals that the well has an absolute open flow of 2,800,000 cubic feet of gas per day measured at 14.4 p.s.i.a. and 60° F.

Very truly yours,

Geo. B. Shelton, Chief
Gas Fields Operations Branch
Helium Division, Region VI

Enclosure

Copy to: B. H. Howell, Alhambra, California

CC: P. T. McGrath, Farmington, New Mexico
P. W. Johnson, Tucson, Arizona

2.8 MCF/day at 14.4 p.s.i.a. - 60°

46588

W. FRANCIS WILSON
KENT A. BLAKE

WILSON & WILSON
ATTORNEYS AT LAW
SUITE 411 PHOENIX NATIONAL BANK BLDG.
PHOENIX, ARIZONA
TELEPHONE 3-6195

Heindl File

September 21, 1950

State Land Department
New State Office Bldg.
17th Avenue and Adams Street
Phoenix, Arizona

Attention: Mr. Lane and Mr. Heindl

Gentlemen:

I am enclosing a copy of report and letter heretofore filed with your department on the 22nd day of August, 1950.

I am also enclosing supplemental report covering the Macie No. 1 well of Kipling Petroleum, Inc. at Navajo.

Please feel free to call upon me for any information or service that I may render to you.

Very truly yours,

KIPLING PETROLEUM, Inc.

W. Francis Wilson
W. Francis Wilson
President

WFW A
Encs.

46588

August 22, 1950

Mr. W. W. Lane, State Land Commissioner
New State Office Building
Phoenix, Arizona

Dear Mr. Lane:

Enclosed you will find Form O. & G. 3 as requested. It is, of course, noticeable that the form does not fit the present operation; hence I will include data in this letter that may more nearly answer your inquiry of June 21st, and subsequent inquiries of August 15th.

The well was commenced on or about the 20th of February. The type of rig employed is a cable tool rig. The drilling progressed without event until just prior to the 8th of May when there were some gas showings in the well at a depth less than 755 feet. The gas tested at this depth, as furnished to us by the U. S. Bureau of Mines at Amarillo, Texas, contained the elements noted on O. & G. 3. We have no subsequent tests that show anything other than almost identically the same thing.

Subsequent drilling in the hole after the 8th of May developed more gas, and the most accurate test that we have been able to apply has produced an estimated twenty-four million cubic feet of this gas every twenty-four hours. No visible lessening has occurred in the gas flow to date. The well has never been shut down at any time except during the week of August 6th to 12th, at which time the driller layed off of his own accord, and resumed on the 14th of August. Drilling has been extremely difficult and progress has been slow since the 755 foot level due to the difficulty of working with the gas. The exact amount in barrels is not know. On the 5th of August, Halliburton Company applied acquajel designed to shut off the gas and water. It did not shut the gas off, and we are not absolutely certain that it shut the water off. We

465-88

Mr. Lane, page 2, August 22, 1950.

have, subsequently, effected a gas shut-off so that the gas does not now interfere with the drilling. However, during the drilling operations, the gas is still escaping through a flow pipe. We are informed by the U. S. Bureau of Mines that the government has two helium plants, only one of which was in operation at the time of the discovery of this gas, supplying all civilian and military needs. We have reached the conclusion that the gas in its present quantity and under the present circumstances is of no commercial value.

The operation is now being supervised by Mr. Samuel J. Joseph, geologist in charge. The driller is Rex C. Saul, and every effort is being made each day to lower the hole and test the Coconino sandstone. We are presently of the opinion that the Coconino sandstone has not been reached, and are somewhat encouraged by this fact as the sedimentaries in this vicinity seem to bear out the thought which we had in the beginning, that there was an embayment and that the sedimentaries would be thicker than previously reported.

The writer has made diligent inquiry of numerous geologists, and has received the consistent opinion that micro-analysis of any substance so far encountered is not practical, nor in conformity with good oil field practice. Various field tests have been applied to all materials encountered, with the result that oil showings have been found at various depths, but not in quantities sufficient to be deemed at all commercial.

It is our considered opinion that we are still drilling in the Chinle formation.

Should you desire further information at the present time, please feel free to call the undersigned, or Mr. Samuel J. Joseph, geologist in charge, at Navajo.

Thanking you for your cooperation, and with kindest personal regards of the writer, we are

Very truly yours,

KIPLING PETROLEUM, INC.

W. Francis Wilson
W. Francis Wilson, President

WFW A
Encs. 2

46588



AMARILLO HELIUM PLANT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
AMARILLO, TEXAS

OIL AND GAS LABORATORY

October 2, 1950

Mr. L. A. Heindl, Geologist
State Land Department
State of Arizona
Phoenix, Arizona

Dear Mr. Heindl:

I have your letter of September 15, 1950, regarding the Kipling Petroleum Company well at Navajo, Arizona..

I appreciate the information that you furnished me regarding the well. I am not sure yet regarding our need for reference to the well cuttings, but would appreciate having a copy of the log whenever it becomes available. We have received three samples from the well, two of which have been analyzed, and with a helium analysis only on the third sample. We hope to get this third sample analyzed in the near future. We received a letter from Mr. Cody Harris under date of June 19, 1950, advising that he was agreeable to our furnishing you the analytical data from the Kipling well and I am pleased to submit the enclosed data. We will provide you, for your information, the remaining analytical results on the 1115 foot sample as soon as they become available.

Sincerely yours,

E. M. Frost, Jr.
Chief, Gas Fields Operations Branch
Helium Division, Region VI

Enclosure

46588

Analyses by Geological Survey, United States Department of the Interior
(Parts per million)

Laboratory Number	13,878
Date of collection . . .	3/6/50
Silica (SiO ₂)	8.5
Iron (Fe)	---
Calcium (Ca)	98
Magnesium (Mg)	15
Sodium (Na)	2,260
Potassium (K)	---
Bicarbonate (HCO ₃)	174
Sulfate (SO ₄)	3,720
Chloride (Cl)	850
Fluoride (F)8
Nitrate (NO ₃)	5.9
Boron (B)	---
Dissolved solids:	
Sum - ppm.	7,040
- tons/a.ft.	9.57
Hardness as CaCO ₃ :	
Total.	306
Noncarbonate.	164
Specific conductance (Micromhos at 25° C.)	9,490
Percent sodium	94
pH	---

Lab. No. 13,878- Fld. No. A-20-26-34cc, SW SW 1/4 sec. 34, T-20-N, R-26-E, near Navaho, Ariz.,
Apache Co., Ariz., oil test-cable tools, 300' depth (now drilling); 16"
diam.; 20' cased, D/d-1950; P/c-bailer, Kipling Pet. Co., Macie No. 1-owner;
WBF-Chinle fm. from 295 to 310, W/1-190' below LSD.

No permit

KIPLING PETROLEUM COMPANY WELL MACIE No. 1, S-34, T 20N, R 26E,
APACHE COUNTY, ARIZONA

Results of analysis by mass spectrometer

	<u>780'-810'</u>	<u>1032'-1055'</u>	<u>1115'</u>
Methane	0.85 percent	0.96 percent	
Ethane	0.11	0.13	
Propane	0.04	0.06	
N-Butane	0.06	0.08	
I-Butane	0.00	0.00	
N-Pentane	0.00	0.00	
I-Pentane	0.00	0.00	
Cyclopentane	0.00	0.00	
Hexanes plus	0.00	0.00	
Nitrogen	90.76	89.08	
Oxygen	0.29		
Argon	0.62	0.66	
Helium	6.98	8.09	8.37 avg.
Hydrogen	0.03	0.03	
Carbon Dioxide <u>1/</u>	0.26 <u>1/</u>	0.91	

1/ Sample had stood over water for several days

2/ Sample as received contained oxygen indicating about 30% air contamination. Results corrected to air-free basis.

May 8, 1958
7551

46588

W. FRANCIS WILSON
KENT A. BLAKE

WILSON & WILSON
ATTORNEYS AT LAW
SUITE 411 PHOENIX NATIONAL BANK BLDG
PHOENIX, ARIZONA
TELEPHONE 3-8195

August 22, 1950.

Mr. W. W. Lane, State Land Commissioner
New State Office Building
Phoenix, Arizona

RECEIVED
AUG 24 1950
STATE LAND COMMISSION
PHOENIX, ARIZONA

Dear Mr. Land:

Enclosed you will find Form O.N.G. 3 as requested. It is, of course, noticeable that the form does not fit the present operation, hence I will include data in this letter that may more nearly answer your inquiry of June 21st, and subsequent inquiries of August 15th.

The well was commenced on or about the 20th of February. The type of rig employed is a cable tool rig. The drilling progressed without event until just prior to the 8th of May when there were some gas showings in the well at a depth less than 755 feet. The gas tested at this depth, as furnished to us by the U. S. Bureau of Mines at Amarillo, Texas, contained the elements noted on O.N.G. 3. We have no subsequent tests that show anything other than almost identically the same thing.

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46588

Mr. Lane, page 2, August 22, 1950.

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The operation is now being supervised by Mr. Samuel J. Joseph, geologist in charge. The driller is Rex C. Saul, and every effort is being made each day to lower the hole and test the Coconino sandstone. We are presently of the opinion that the Coconino sandstone has not been reached, and are somewhat encouraged by this fact as the sedimentaries in this vicinity seem to bear out the thought which we had in the beginning, that there was an embayment and that the sedimentaries would be thicker than previously reported.

The writer has made diligent inquiry of numerous geologists, and has received the consistent opinion that micro-analysis of any substance so far encountered is not practical, nor in conformity with good oil field practice. Various field tests have been applied to all materials encountered, with the result that oil showings have been found at various depths, but not in quantities sufficient to be deemed at all commercial.

It is our considered opinion that we are still drilling in the Chinle formation.

Should you desire further information at the present time, please feel free to call the undersigned, or Mr. Samuel J. Joseph, geologist in charge, at Navajo.

Thanking you for your cooperation, and with kindest personal regards of the writer, we are

Very truly yours,

1382
aug 26
KIPLING PETROLEUM, INC.

W. Francis Wilson
W. Francis Wilson, President

WFW A
Encs. 2

46588

46588

August 15, 1950

General Manager
Kipling Petroleum Company
Navajo, Arizona.

Dear Sir:

Some time ago this office was informed by Mr. Cody Harris that samples of the second horizon was forwarded to the U. S. Bureau of Mines for analysis. We would very much like to have copy of this analysis for our files as soon as they are available.

We have had no one from this office visit your well site for some time. Would you please bring us up to date as to your present activities?

Very truly yours,

L. A. Heindl, Geologist

LAH:tm

46588

August 15, 1950

Mr. Cody O. Harris
Kipling Petroleum Company
Navajo, Arizona

Dear Mr. Harris:

The July monthly report of drilling operations (Form O. & G. No. 3, Lessee's Monthly Report) due in this office by August 6, 1950, has not yet been received. The necessity of forwarding this information was brought to your attention in a letter dated June 21, 1950.

We would like to remind you that this report is due, regardless of what the current operations may be, until such time as the drilling permit is terminated.

Very truly yours,

W. W. Lane
State Land Commissioner

LAH:
WWL:bm

46588

June 23, 1950

Navajo, Arizona

Mr. W.W. Lane
State Land Commissioner,
Phoenix, Ariz.

Dear Mr. Lane:

I recieved your letter of June 22, 1950, and copies of form
O.L.G. No. 7, Lessee's Monthly Report of Operations.
Will comply with same.

Very Truly Yours;

Cody O. Harris

Kipling Petroleum Co.

RECORDED
JUN 24 1950
STATE LAND DEPT.
PHOENIX, ARIZ.

46588

June 24-1950

Mr. I. A. Heindl
State Land Department
Phoenix; Ariz.

1950

Dear Mr. Heindl:-

Gas samples from 1032 to 1070 have been sent to United States Bureau of Mines at Amarillo, Texas. for their analysis.

I ask them if they would send you a copy of the analysis.

Since your visit at the well, we have run 8 in. casing to a depth of 1084 ft. closing off the gas.

We are now drilling ahead the past week.

Mr. Dorsey Heager has one of his geologists here with us on the job.

Yours very truly,

Cody O. Harris

June 21, 1950

Mr. Cody O. Harris
Kipling Petroleum Company
Navajo, Arizona

Dear Mr. Harris:

As of July 1, 1950 the State Land Department will require monthly reports of operations of oil and gas drilling activities in compliance with Section 6 of the operating regulations governing oil and gas drilling permits in the State of Arizona.

The form of the report will be Form O. & G. No. 3, Lessee's Monthly Report of Operations, copies of which are enclosed. Only one copy *two copies* will be required by this office, printed notice on the form to the contrary. The report is required for each calendar month and is due the 6th of the succeeding month. Section 6 states, "The report * * * constitutes a general summary of the status of operations on the property, and whatever such status may be, the report must be submitted each month until the permit or lease is terminated."

Specifically, the following items of information will be entered:

- 1) Total depth.
- 2) Shutdowns, length of and reasons for.
- 3) Tests, type of and dates.
- 4) Any other noteworthy information regarding operation.

The first report is due August 6, 1950 covering operations from July 1st to 31st, 1950.

An acknowledgment of this letter is requested.

Your cooperation in this matter will be appreciated.

Very truly yours,

W. W. Lane
State Land Commissioner

WWL:LAH:kb
encls.

46588

June 13, 1950

Mr. Cody O. Harris
Kipling Petroleum Company
Navajo, Arizona

Dear Mr. Harris:

We received a letter from Mr. C. W. Seibel of the United States Bureau of Mines at Amarillo, Texas, stating that they have not received a sample of the gas between 1032 and 1070. If such a sample has not been forwarded to them, I believe that it would be to your advantage to catch a sample as early as possible for their analysis.

I would very much appreciate having a summary of your operations at the well since the time of my last visit, and also to receive assurance that every practical step is being taken by yourself to minimize the loss of gas at the well.

I trust that everything is going along satisfactorily, and if there is anything that I can do to be of help, please let me know.

Very truly yours,

L. A. Hainell
Geologist

LAH:kb

46588

March 21, 1950

Mr. C. M. S. Kipling, Pres.
Kipling Petroleum, Inc.
Navajo, Arizona

Dear Mr. Kipling:

Thank you very much for the details of the location and the elevation of your Macie #1 well. I trust that everything is proceeding satisfactorily.

As you know, following the completion of the well, this State requires for its records a complete log and history as well as a complete set of well cuttings and cores. These cuttings should be taken at at least 10-foot intervals, and at such time as the well is complete the samples will be picked up and analyzed by our office.

I have been hoping to be able to come up and scout your well, but to date have been unable to do so.

Sincerely yours,

L. A. Heindl
Geologist

LAH:kb

46588

OPERATIONS
NAVAJO, ARIZONA



Navajo Arizona
March 11, 1950.

C. M. S. KIPLING
PRES. AND GEN. MGR.
CODY O. HARRIS
SEC. TREAS.

State Land Department
Phoenix, Arizona.

RECEIVED
MAR 14 1950
STATE LAND DEPT.
OF ARIZONA

Dear Sirs:

Attention Mr. Duncan.

Our Surveyer, Mr. Leonard Marr, of Holbrook, has partly completed a survey of the Pinta Structure and has submitted the following description as the location of the Macie No. 1 well of the above Company;

N. 39° 17½' E. -- 913' from the S.W. Corner
of Sec. 34, Tp. 20 N. Range 26, E.

Also the derrick floor elevation has been ascertained at 5830'.

Mr. Marr claims that prior surveys have been very misleading, hence the delay in his work.

Respectfully yours

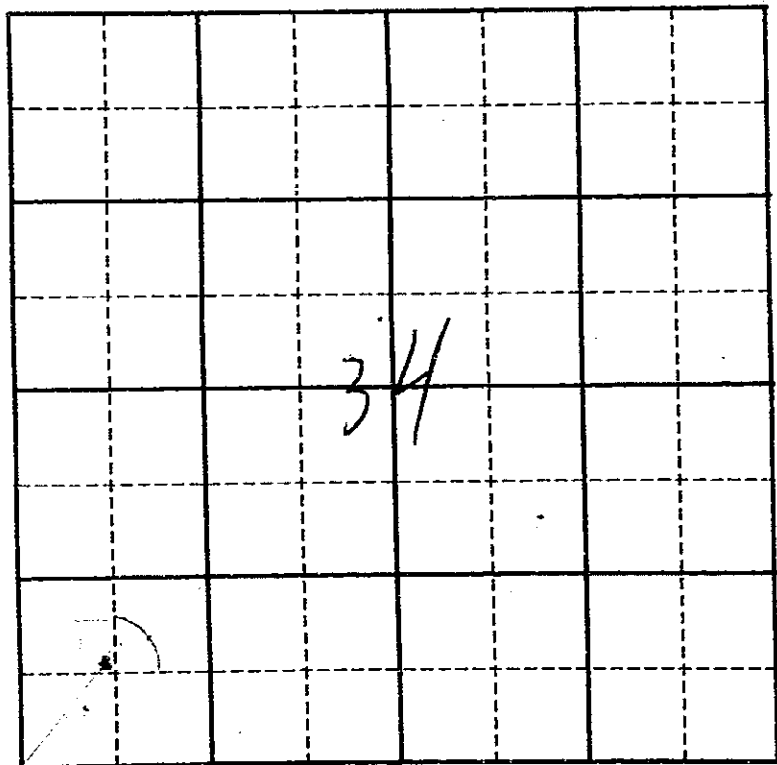
C. M. S. Kipling
C. M. S. Kipling

46588

Sec. 34

T. 20 N

R. 26 E



Abstracted _____ Area _____

Plat of Survey Filed _____

ARIZONA STATE LAND DEPARTMENT

Sundry Notices and Reports on Wells

Lease or
Permit No. 46

Notice of intention to drill ☒
 Notice of intention to change plans ☐
 Notice of date for test of water shut-off ☐
 Report on result of test of water shut-off ☐
 Notice of intention to re-drill or repair well ☐
 Notice of intention to shoot ☐
 Subsequent record of shooting ☐
 Record of perforating casing ☐
 Notice of intention to pull or otherwise alter casing ☐
 Notice of intention to abandon well ☐
 Subsequent report of abandonment ☐
 Supplementary well history ☐

(Indicate above by check mark nature of report, notice or other data)

Following is a (Notice of intention to do work) on land under (permit) described as follows:
 (Report of work done) (lease)

Well No. Marie No. 1, 34 20 N 26 E
 Section Township Range
N. 89°-17' E. 913' from the
S.W. Corner (N)
 The well is located _____ feet (S) of _____ line and _____ feet
 (E)
 (W) of _____ line of
 Section 34 20 N, Range 26 E
 The elevation of the derrick floor above sea level is 5850' feet

DETAILS OF PLAN OF WORK

(State names of an expected depth to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other proposed work.)

Surface String 60' - 16" - 42 lb Cemented at Bottom
1000 ft. 10" - 35 lb, water shut off pipe, Cemented at Bottom
8" oil string to 3500' or less

Approved March 14, 1950
[Signature]
 State Land Commissioner

Company Tripling Petroleum Inc
 By [Signature]
 Title President

Arizona State Land Department
 Address Capitol Annex, Phoenix, Arizona

Address Marana, Arizona

NOTE:—Reports on this form to be submitted in triplicate to the Commissioner for approval.

46588

ARIZONA STATE LAND DEPARTMENT
Sundry Notices and Reports on Wells

Lease or
Permit No. 46588

Notice of intention to drill ☒
 Notice of intention to change plans
 Notice of date for test of water shut-off
 Report on result of test of water shut-off
 Notice of intention to re-drill or repair well
 Notice of intention to shoot
 Subsequent record of shooting
 Record of perforating casing
 Notice of intention to pull or otherwise alter casing
 Notice of intention to abandon well
 Subsequent report of abandonment
 Supplementary well history

(Indicate above by check mark nature of report, notice or other data)

Following is a (Notice of intention to do work) on land under (permit) described as follows:
 (Report of work done) (lease)

Well No. Macie No. 1, Section 34, Township 20 N., Range 26 E.

N. 39°-17' E. 913' from the
S.W. Corner (N)
 The well is located _____ feet (S) of _____ line and _____ feet
 (E)
 (W) of _____ line of

Section 34 20 N., Range 26 E.
 The elevation of the derrick floor above sea level is 5830' feet

DETAILS OF PLAN OF WORK

(State names of an expected depth to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other proposed work.)

Surface String 60' - 16" - 42 lb Cemented at Bottom
1000 ft. 10" - 35 lb. water shut off pipe, Cemented at Bottom
8" oil string to 3500' or less

Approved March 14, 1950
[Signature]
 State Land Commissioner

Company Tupling Petroleum Inc
 By [Signature]
 Title President

Arizona State Land Department
 Address Capitol Annex, Phoenix, Arizona

Address Marana, Arizona

NOTE:—Reports on this form to be submitted in triplicate to the Commissioner for approval.